DOCUMENT RESUME

ED 437 937 IR 020 300

AUTHOR	Colker, Laura J.
TITLE	Reminiscences from the Field: The Continuing Story of ERIC.
INSTITUTION	DynEDRS, Inc., Springfield, VA.
PUB DATE	2000-00-00
NOTE	245p.
AVAILABLE FROM	ERIC Document Reproduction Service (EDRS), DynEDRS, Inc., 7420 Fullerton Rd., Suite 110, Springfield, VA 22153-2852; Tel: 800-443-3742 (Toll Free); Fax: 703-440-1408.
PUB TYPE	ERIC Publications (071) -- Reports - Descriptive (141)
EDRS PRICE	EDRS Price MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS	Development; *Educational Resources; History; Information Networks; *Information Services; Information Sources; Information Technology; Internet; Interviews; *Reminiscence; Technological Advancement
IDENTIFIERS	*Educational Information; *ERIC

ABSTRACT

The Educational Resources Information Center (ERIC) was born in the mid-1960s and is today the world's largest and most popular educational database. The history of ERIC's early development has been told in Del Trester's 1981 narrative, "ERIC--The First Fifteen Years: 1964-1979, A History of the Educational Resources Information Center." This book takes up where the Trester book left off in 1980 and ends in 1999. Unlike the Trester book, this volume is not an historical chronology, but rather, a somewhat subjective examination of the ERIC system in a world of rapid technological advances and changing political priorities. It is primarily an oral history, leaning heavily on the reminiscences of those who were the key players during these years and the files that they kept. Highlights include an overview of the ERIC system; the redesign period; ERIC's evolving mission in serving the needs of a diverse audience; effects of technological developments in "Phase I"; the impact of the Internet in "Phase II"; extending the database electronically and to nonprint media; dealing with an inadequate budget; and maintaining quality. Several appendices include interview questions and interviewees and chronological information of names and events in ERIC's development. (Contains a subject and a personal name index.) (AEF)

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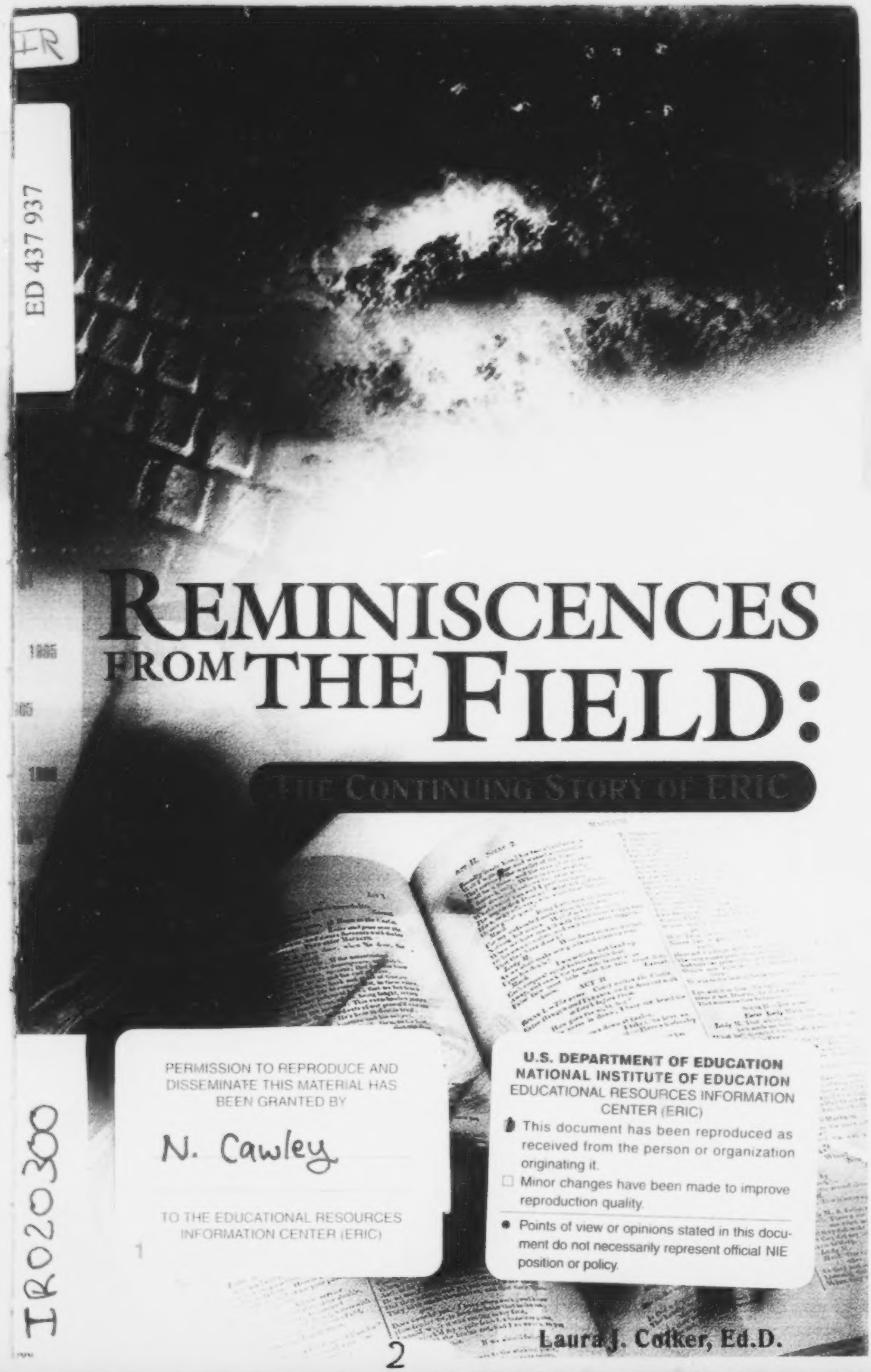

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THE CONTINUING STORY OF ERIC

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Laura J. Colker, Ed.D.

Reminiscences from the Field:

The Continuing Story of ERIC*

Laura J. Colker, Ed.D.

*The Educational Resources Information Center

Published by:
ERIC Document Reproduction Service
DynEDRS, Inc., 7420 Fullerton Road, Suite 110
Springfield, VA 22153-2852

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Dedication

The ERIC Document Reproduction Service (EDRS) commissioned this history of ERIC because of our belief that ERIC's story is an important one that needs to be preserved. We dedicate this book to all members of the ERIC family who have worked so passionately to make the ERIC story a success story. In particular, this book is offered as a tribute to Ted Brandhorst, who for 30 years has ensured the integrity of the ERIC database. His leadership has inspired us all.

Table of Contents

Dedication iii

Foreword ix

Chapter 1 - ERIC Comes of Age 1

Overview of the ERIC System 2

Putting ERIC in Historical Perspective 6

Present-day ERIC 22

Chapter 2 - Under the Magnifying Glass 25

The Redesign Years: 1984-1987 26

The Legacy of the Redesign Period 53

Chapter 3 - ERIC's Evolving Mission 59

An Archive or an Information Center? 59

The "New" ERIC User 64

Serving the Needs of a Diverse Audience 70

Materials Aimed at a Practitioner Audience 88

Chapter 4 - Technology Takes Over: Phase I 95

Technological Advances: 1980-1992 96

Chapter 5 - Enter the Internet: Phase II of Technology's Impact on ERIC 115

SMARTLINE 116

AskERIC 119

NPIN 126

Web Sites for All 130

Other Internet Forays 135

The Road to Full Text 140

EDRS's Response 144

Chapter 6 - ERIC in the 21st Century 151

Technology's Continuing Impact 152

Extending the Database Electronically and to Nonprint Media 155

Extending ERIC Outward 157

Dealing with an Inadequate Budget 159

Maintaining Balance and Quality 163

Appendix A - Interview Questions for ERIC Staff 167

Appendix B - List of Interviewees 169

Table of Contents

Appendix C - The ERIC Program Office 173

Appendix D - The ERIC Clearinghouses, Adjunct Clearinghouses, and Affiliate Clearinghouse 174

Appendix E - The ERIC Facility 183

Appendix F - ERIC Document Reproduction Service 184

Appendix G - ACCESS ERIC 185

Appendix H - Developmental Milestones in ERIC's History 186

Notes 191

Subject Index 223

Personal Name Index 232

Foreword

The Educational Resources Information Center (ERIC) was born in the mid-1960s. Over the past 30 years, ERIC has evolved from a concept into the entity it is today: the world's largest and most popular educational database. But ERIC is more than "just a database." Behind the database is an organization of dedicated and determined individuals. ERIC's story, therefore, covers both the development of a great educational information system and the people responsible for that development. It is a story that is at the same time professional and personal, a story that is unique and worthy of celebration.

The history of ERIC's early development has been told in Del Trester's 1981 narrative, *ERIC—The First Fifteen Years: 1964-1979, A History of the Educational Resources Information Center*. That volume provides a detailed chronology of how ERIC came into being and established itself as an archive and provider of materials for a largely research-oriented educational community.

This book takes up where the Trester book left off in 1980 and ends in 1999, as ERIC approached the new millennium. The impetus for writing this volume came from the ERIC Document Reproduction Service (EDRS). It was their vision that made this book come to life. Much of the credit for seeing this book through to completion belongs to Nancy Cawley, EDRS's director of marketing. It was she who coordinated the effort and breathed life into it.

Unlike the Trester book, this volume is not an historical chronology. Rather, it is a somewhat subjective examination of the ERIC system in a world of rapid technological advances and changing political priorities. It is primarily an oral history, leaning heavily on the reminiscences of those who were the key players during these years and the files that they kept. It is important to be aware that as ERIC—along with the rest of the world—transitioned into the computer age, hard copy of many notes and memoranda vanished into paperless crevices. As a consequence, this book was dependent on the materials staff chose to keep and does not cover every event in ERIC's active life.

The ERIC story as it has emerged in this volume is one of a program that has persevered and flourished. It is also a story of the "ERIC family" who, through their commitment and belief in their work, have ensured ERIC's survival and future. The insights and memories of members of the ERIC community are the heart and soul of this book. Through individual interviews lasting up to several hours each, most of the key participants in ERIC since 1980 were interviewed.[1] In addition to providing a formal review of the documents so graciously supplied by the interviewees, this book tries to capture the personal side of the ERIC story. Special thanks go to Dianne Rothenberg (PS), Jane Henson (SO), Jeanne Rennie (FL), and Lynn Smarte of ACCESS ERIC, who emptied their office file drawers for this project.

As ERIC begins the 21st century, this book is offered as a tribute to an organization and a staff that fill a vital niche in education. It is they who have kept ERIC's star brilliant.

Laura J. Colker, Ed.D
December 1999

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[1] See Appendix A for a copy of the interview instrument. Appendix B lists those who were interviewed and their affiliation with ERIC.

Chapter 1

ERIC Comes of Age

> *ERIC is a success story. Any significant change in its structure, organization, or operation should be approached with great circumspection and care.... In a knowledge information era, ERIC should be strengthened and enhanced.*
>
> –Kenneth S. Tollett, Distinguished Professor of Higher Education, Howard University, Congressional Oversight Hearing, 1987

> *ERIC started out hot.*
>
> –Bob Stonehill, 4/16/97

The Educational Resources Information Center—ERIC, as it is more popularly known—is the nation's premier education information service. ERIC collects, analyzes, catalogues, indexes, abstracts, and makes available educational documents and journal articles produced from federal, state, local, public, private, and international sources. Sponsored by the U.S. Department of Education and now administered by the National Library of Education (NLE), ERIC maintains a dynamic bibliographic database of more than 1 million entries.[1]

In addition to the database itself—which is the cornerstone of ERIC—ERIC provides online educational resources and electronic question-and-answer services; reference and referral services for ERIC users; and various reference tools, directories, and calendars in support of the database. Moreover, the ERIC system publishes education-related works, including ERIC Digests, analyses, state-of-the-art reviews, bibliographies on "hot topics," and manuscripts.

ERIC supports not only an international educational research community, but the everyday user as well. A school superintendent wanting to learn about reform issues, a teacher seeking science curricula, and a parent searching for resources to help his autistic child all find what they need in ERIC. ERIC houses materials that cover the full range of educational topics while at the same time targeting all members of the user audience.

Overview of the ERIC System

The ERIC of today is a vital and dynamic system. A small central unit in the U.S. Department of Education, the ERIC Program Office, formerly known as Central ERIC (CERIC), oversees it. The ERIC Program Office creates policy, coordinates systemwide activities, and monitors the performance of the 20 contractors who support the system. Appendix C presents an overview of the staffing of the ERIC Program Office since its creation in 1964. This chart and others in the appendices are offered to assist the reader in following this brief history of ERIC.

Chief among the contractors to the ERIC Program Office are the 16 subject-specific clearinghouses,[2] each responsible for collecting and processing[3] the relevant literature for the database. Each clearinghouse publishes reports, ERIC Digests, monographs, analyses, and bibliographies. Increasingly, clearinghouses provide a variety of services and products for users beyond these traditional activities. These include referral services, Web-based[4] information resources, and online question-and-answer services, such as the popular AskERIC service sponsored by the ERIC Clearinghouse on Information & Technology (IR).[5] The clearinghouses are located throughout the country at universities and professional organizations that have a documented interest in that area of education. "Together, the clearinghouses present the most comprehensive mosaic of education in the country."[6]

In addition to the 16 clearinghouses, there is a growing number (currently 13) of "adjunct" clearinghouses. These adjunct clearinghouses are linked with an appropriate ERIC clearinghouse and help provide more indepth coverage of a particular segment of the literature, e.g., child care. Unlike the 16 ERIC clearinghouses, the adjunct clearinghouses all receive funding from outside the ERIC system. Each adjunct clearinghouse identifies the key literature in its purview, which is then input to the ERIC database by the associated ERIC clearinghouse. The adjuncts, like the ERIC clearinghouses, provide free reference and referral services to their user audiences.

A third type of clearinghouse was established in 1998—an "affiliated" clearinghouse. The National Clearinghouse on Educational Facilities (NCEF)—the first clearinghouse to be so designated—operates very much like the 16 subject-specific clearinghouses in that it submits material for the ERIC database directly, without going through one of the main clearinghouses. Devoted to the design, construction, equipping, furnishing, maintenance, renovation, rehabilitation, mechanical operation, and demolition of elementary and secondary educational facilities, NCEF specializes in content that was once subsumed under the scope of the Educational Management (EA) clearinghouse. Interestingly, from June 1967 to June 1970, Educational Facilities was one of the major subject-specific clearinghouses. It was merged with Educational Management in 1970. Some 28 years later, it was established as an affiliated clearinghouse in its own right.

Together, the clearinghouses have acquisition arrangements with nearly 2,200 institutions and organizations. These organizations routinely and regularly submit materials to be considered for inclusion in the ERIC database. The organizational history of the subject-specific adjunct and affiliated clearinghouses appears in Appendix D.

Once materials are processed by the clearinghouses, they are sent to the ERIC Processing and Reference Facility, a centralized database management facility charged with editing the data for consistency and conformance to standards of the field, and assembling the data for publication. Since its establishment in 1966, the Facility has operated under contract to the ERIC Program Office "as a general scheduler and coordinator of the decentralized operation."[7] Appendix E provides the contracting history of the Facility over time.

Each year the Facility accepts approximately 33,000 new entries to the database—13,000 of which are documents (e.g., conference presentations, research/technical reports, essays, teaching guides, books, and multi/bilingual materials) and 20,000 of which are journal articles. These entries are published in two printed abstract journals: documents are covered in *Resources in Education* (RIE) and articles in *Current Index to Journals in Education* (CIJE). The Government Printing Office (GPO) publishes RIE monthly; Oryx Press publishes CIJE monthly, as well as an annual index to RIE.

As each month's supply of documents is processed, the documents and their final database records are forwarded to the ERIC Document Reproduction Service (EDRS). Here, about 90 percent of the documents are archived on microfiche and electronic media. The ERIC document collection on microfiche is distributed on a monthly subscription basis to more than 1,000 libraries, schools, and educational institutions around the world. In addition, most documents are available in hard (paper) copy through mail or fax. EDRS has made full-text documents available in portable document format (*.pdf) via the Internet since 1997.

The Office of Education established EDRS in November 1965 as a means of making the identified materials available to users. Because so many of the initial documents in the system were "fugitive" in nature, and not easily obtained by users, to not have provided this material would have been self-defeating. Appendix F provides an overview of the EDRS support contract.

The journal articles published in CIJE are available at libraries, through interlibrary loan, through the originating journal publisher, or through article reprint services such as ISI (Institute for Scientific Information) or The UnCover Company. Since its beginning, ERIC has striven to make its database readily available to the user at the lowest cost possible. In addition to print and microfiche availability, vendors provide the database in online and CD-ROM form. In fact, ERIC was the first file to be placed on Dialog's initial online retrieval system in 1972. To this day, it remains File Number 1 on that system.

As of 1999, five online vendors offer access to the ERIC database: Dialog, NISC (National Information Services Corporation), OCLC (Online Computer Library Center), SilverPlatter, and Ovid Technologies. There are four CD-ROM vendors, including Dialog, EBSCO Publishers, NISC, and SilverPlatter. Many universities also purchase the database and offer it for public access or to their staff and students via their Internet Web sites.

As the content of the database has grown from unpublished research reports to include practitioner-oriented materials, journal articles, and books, the need to make these materials more accessible has become part of ERIC's mission. The newest member of the ERIC team, ACCESS ERIC, has outreach as its core responsibility.

Created in 1989 specifically to provide free reference and referral services, public relations, and marketing services, ACCESS ERIC has magnified ERIC's ability to respond to customers. Through its easy-to-use publications and directories, the general public has had ever-increasing exposure to the ERIC collection. In 1998 alone, clearinghouse and ACCESS ERIC staff answered 50,729 toll-free calls; 34,733 letters; and 89,036 e-mail messages from ERIC users.[8]

ACCESS ERIC also publishes documents and magazines that explore current issues, research, and trends in education. Materials are custom-packaged to deliver ERIC information to parents, teachers, and school administrators. The stewardship of ACCESS ERIC is shown in Appendix G.

One important thrust of ACCESS ERIC has been to operate the gateway to ERIC's presence on the Internet. Since the 1992 introduction by the Clearinghouse on Information & Technology (IR) of AskERIC—an electronic question-and-answer service, virtual library, and access point to the ERIC database—ERIC has been a major force on the Internet. All of the clearinghouses and support contractors have sites on the Web; many of these are innovative award winners. More than 600,000 Internet users access ERIC sites weekly.

The remaining members of the ERIC family are the 650-plus partner organizations that support ERIC by disseminating information, conducting joint conferences and projects, and supplying documents for the database. Partners range from the sponsoring hosts for the adjunct and affiliated clearinghouses, such as the National Council of Educational Opportunity Association (which funds the Adjunct TRIO Clearinghouse in Higher Education), to organizations such as the National Association for State Boards of Education, the American Psychological Association, and the Children's Television Network.

Putting ERIC in Historical Perspective

The United States has never had a single, unified policy towards federal information systems. As such, each agency or organization determines its own approach. While this has naturally led to inconsistencies in approach, it has also enabled each agency to develop its own best strategy.

The history of ERIC, as noted earlier, can be traced to the early 1960s. The Federal Government at this time was spending relatively large amounts of funds on educational contracts and grants related to research, evaluation, and best practices. A general concern was raised as to how the final reports and project deliverables developed under this funding were to be tracked and disseminated. What was the point of having all this federally funded research if the results were not accessible to the field?

Chuck Hoover, a former director of the ERIC program, and Ted Brandhorst, the longtime director of the Facility, offered this illustration of the situation ERIC set out to resolve in a paper they co-authored:

> A study or research effort was commissioned; the final report (perhaps the only result) was sent to the Project Monitor in 10-25 copies; if approved, a limited distribution was effected; a copy of the report sat on the monitor's shelf for awhile; eventually the monitor was re-assigned or left; a year or so after the project was closed, virtually no one could find a copy of the report. Over time, it became, for all intents and purposes, as if the project had never existed.... What was needed was a "system" for acquiring, selecting, processing, announcing, disseminating, and archiving the growing body of knowledge represented by these reports and other documents.[9]

The acronym ERIC (standing originally for Educational Research Information Center) was coined in 1961 as a prototype idea for a government research information center that would collect and disseminate these unpublished—fugitive—reports.

On May 15, 1964, the U.S. Office of Education responded by officially founding ERIC. Although enthusiasm for the new center was high, according to early accounts, "it was an office without funds and an office without a program."[10] It did, however, have a director who had volunteered to take on the position—Harold A. Haswell.

Enthusiasm and a budget enabled the fledgling office to become a viable program. In July 1965, ERIC's goals were summarized in this mission statement:

> ERIC exists to collect research information from the schools and colleges of the Nation and from the educational community generally and it must also disseminate this information. This responsibility involves (1) the location, acquisition, and evaluation of source materials; (2) the indexing, abstracting, reporting and storing of these materials; (3) the retrieval of information upon request; (4) the dissemination of that information in the form of references, annotated bibliographies, abstracts or reports; (5) the preparation of alerting publications and trend studies; and (6) the rendering of technical and consultative services.[11]

To execute this mission, ERIC's staff of seven (which included two secretary/stenographers) stretched themselves and their resources to the limit. As they labored to establish the ERIC system,[12] they made a number of governing decisions that have endured over time. In particular, credit must go to Dr. Lee Burchinal, past director of the Office of Education's Division of Research, and his University of Michigan consultant, Dr. Frederick Goodman, for developing the guiding principles that have steered ERIC into the future. These principles are presented here as "design decisions."

Design Decision #1: Decentralization

Perhaps the most monumental of the initial decisions was to decentralize ERIC's operations. Up until the mid-1960s, most governmental information systems had successfully operated under a centralized, monolithic model. Indeed, from April 1964 to March 1966, ERIC operated in this traditional mode. Education as a field, though, has always been strongly linked with decentralization, with power for decision making resting at the local level. In deciding how best to set up the ERIC system, ERIC's founders opted to incorporate the concept of decentralization into ERIC's design.

Looking back at this time some 31 years after the fact, Burchinal recalled these formative times:

> When I came in, I felt I really had to do a quick study on ERIC. Either do something to kill it or something with it. I went down to the ERIC group and met the staff and on one of these visits met Fred Goodman and was very impressed with Fred. Fred and I began a regular kind of consulting relationship.
>
> Fred and I had been talking and we had been looking at some alternatives. Fred had a marvelous concept that sold me. The concept of the clearinghouse was emerging then. I think I was partly responsible for this. I had the notion that an internal operation would never fly for an information center serving education. First, we'd never get the positions we needed. Secondly, there would be opposition to federal people controlling things in education... Fred's notion was to decentralize. Why bring the information to Washington? Why not go to where the information is?[13]

In addition to education's philosophical entrenchment in decentralization, impetus for this design strategy came from the great organizational success story of the 1960s: NASA. The mid-60s were the heyday of John Glenn and the Mercury astronauts. NASA was the heralded headquarters of "the best and the brightest"—and it operated under a decentralized structure.

In reminiscing about this time, Lee Burchinal recounted a visit to NASA, which in 1965 occupied the same building as the Office of Education.

> ...to satisfy my concerns [about decentralization] I decided to check with NASA itself. So, I went to NASA, into the office of the Director, and spoke with the secretary.

> She referred me to Mel [Day] who was director of NASA's technical information system. I spoke with Mel; he was very accommodating.... NASA worked by giving the eight single largest contracts to one organization. Even Cape Canaveral was a contract. So, too, was the information system. I was sold on the approach of contracting.
>
> ERIC would have subject-centered clearinghouses, out where the knowledge and expertise was in the field, and we would have some central organization that would provide the technical services serving the entire organization.[14]

Thus at the very outset, the program designers decided that in addition to a federal program office responsible for policy and quality control, the actual work of collecting, indexing, and abstracting would be done by contracted centers throughout the United States.[15]

This decentralized design has been at the core of ERIC's sustained longevity. By being able to found clearinghouses at universities, institutions, and organizations that have a recognized expertise in a particular field of education, ERIC is assured an optimum vantage point for collecting materials that best represent the field.

In addition, respect for what these host institutions represent has saved ERIC from the brunt of many a political whim and maneuver. Ted Brandhorst drew this conclusion in a recent interview:

> The real driving force behind ERIC—a real source of energy—is the original design of ERIC as a decentralized, diverse group of components, not just one component. ERIC has always acquired a certain energy from the fact that it has all these components, each of which is a little force point. It's not just one place with one manager and one set of ideas. It's 16–20 contractors, all of whom have some creative powers. There is an inherent power in that decentralized structure which has been an engine for ERIC through the years.

> If ERIC had been a single information center in Washington, it would have been a target that might have been destroyed along the way. But I think having 16 clearinghouses each embedded in interest groups within the educational community out there gave it a strength that kept it from being a single target. And kept it from being easily done away with. It survived perhaps because it was a bundle of twigs rather than a single twig.[16]

Kathleen McLane, formerly of the Disabilities and Gifted Education Clearinghouse (EC), shares Brandhorst's affection for the decentralized design:

> I think that a large part of [ERIC's] ability to survive radically changing political whim has been the fact that it is a decentralized system. There were many, many government-funded programs—database programs—that were lost entirely in the early '80s because they were not decentralized and therefore had no way of pulling together political influence when it was needed.[17]

Jeanne Bleuer, of the Counseling and Student Services Clearinghouse (CG) is also a staunch supporter of decentralization. Reflecting on what decentralization has meant, she stated:

> …the genius of ERIC was decentralization right from the beginning…. It was amazing to everybody that such a decentralized system could function as well as it did. You had this group of highly motivated people, committed to new ideas. There was a pioneering spirit and you really felt that you were making educational history by just being a member of the system.[18]

The chief opposition to the decentralized design was—and continues to be—one of logistical operations. It is impossible for clearinghouses to so sharply delineate their content areas that there is no overlap. A topic such as drug prevention education, for example, can fall into the domain of nearly every clearinghouse. Moreover, there is variation in abstracting quality and judgment, no matter how much attention is paid to standardization. The costs involved in funding the clearinghouses[19] account for 80 percent of ERIC's total budget.

Lilian Katz, the longtime director of the Clearinghouse on Elementary and Early Childhood Education (PS), has concluded that the decision to decentralize is not one that ought to be accepted blindly: "I think it probably could be done better if there were fewer [clearinghouses] because of the costs. And in some ways, a lot of what clearinghouses do could be done centrally."[20]

Phyllis Steckler, the publisher of CIJE, concurs. "Should there be 16 clearinghouses today? Probably not. Could this all be done more efficiently and effectively at less cost? I would think so."[21]

Still, despite the drawbacks of complicated coordination and occasional duplication, there have been few attempts to disband the decentralized design. One notable challenge was a 1971 RAND report, with the confrontational title "Alternative Models for the ERIC Clearinghouse Network." Trester's history of ERIC devotes 21 pages to this report, noting that "No other study, no other event, no other crisis had such an impact on the ERIC system as the RAND report. It caused more controversy among all ERIC system members and consternation in the ranks of clearinghouse directors."[22]

Buoyed by support from the clearinghouse directors, the decentralized design has managed to stay intact. The only other notable threat to decentralization came in the mid-1980s when reorganization was seriously under study. Again, though, clearinghouse directors banded together to survive the attack (see Chapter 2). As Jonathan Fife, director of the Clearinghouse on Higher Education (HE) for 21 years, concluded, decentralization has been ERIC's great strength: "The whole trend in quality of management is decentralization. And ERIC is where you have it."[23]

Design Decision #2: Alliances with private companies to augment the budget

From the beginning, ERIC's budget was limited. Contracting out the data collection, processing, and preparation activities accounts for nearly all of ERIC's total budget. In order to obtain other needed services—including document delivery—ERIC came up with an innovative plan for leveraging funds: partnerships with private industry. The genius of this approach is that support services are contracted for by the government, but at no cost to the government. To illustrate, EDRS provides micrographic, paper, and electronic copies of documents for sale to the public. The revenues from these sales support the costs of EDRS's operations, plus a profit margin. The government is able, therefore, to offer guaranteed delivery of ERIC's difficult-to-locate documents at no cost to the taxpayer. At the same time, EDRS is able to apply business management techniques to its work, being a "for profit" institution. Peter Dagutis, the director of EDRS, commented on this relationship: "EDRS is unique within the government contracting world in that we are a no-cost contract to the government. While there has been oversight by the ERIC Program Office, there has never been any [political] pressure since we do not receive funding."[24]

Similarly, CIJE is published at virtually no cost to the government by a private publisher,[25] rather than GPO. In describing how this arrangement came into existence, Ted Brandhorst provided this interesting anecdote:

> To enter into productive relationships with private sector organizations I think was smart. In doing that they sometimes cut corners. For instance, if they had followed the rules, they would have had to publish CIJE through GPO. CIJE never went through GPO. CIJE was first published through Macmillan, then later by Oryx Press. When the Joint Committee on Printing did discover that CIJE was being printed outside, they called ERIC on the carpet. ERIC had to cut a deal with them by providing camera-ready copy of ERIC-

> related Oryx products to GPO for inclusion in the depository library program. If they had followed the rules, they would have had to publish CIJE out of GPO and it would have cost them greatly to do so.[26]

Of course, the government might have opted to not print CIJE at all and hope that a private publisher would pick up the database for a nominal fee (currently $35) and release it to the public in published form. However, through this arrangement with Oryx Press, ERIC is assured that CIJE is published, without expending funds.

ERIC has established a truly symbiotic relationship with EDRS and Oryx Press in which all participants benefit. The government receives the services it needs to run an exemplary information system, while the private companies have a financial incentive to do exemplary work. In fact, the better these private companies do their job, the better the return on their investment.

The success of this relationship is also dependent on trust—that each party, though independent, will respect one another as a part of the ERIC team. Phyllis Steckler describes it this way:

> [We are] not accountable at all—to anybody. However, we follow guidance.... We take part in all of the meetings. We do what we are asked. We provide input when we are asked. I don't think any activities of ERIC that affect CIJE are ever undertaken without consulting us. And certainly, we don't take any steps without consulting them. So we just decided to get married and we've stayed married.[27]

In more recent times, ERIC has continued its practice of leveraging funds through private sector relationships by selling the database to commercial information vendors who, in turn, offer the database to their customers. Five online and four CD-ROM vendors currently market the database to their customers.

Further support for ERIC is generated at no cost to the Department of Education through the adjunct clearinghouses and ERIC Partners. The adjuncts, although funded by sources outside of ERIC, augment ERIC's services. For example, the Test Collection Adjunct Clearinghouse supplements the Assessment and Evaluation Clearinghouse (TM), but is funded by and housed at the Educational Testing Service. Likewise, the National Child Care Information Center, which is funded by the U.S. Department of Health and Human Services, operates the Child Care Clearinghouse, which supplements the Elementary and Early Childhood Education Clearinghouse (PS).

The National Clearinghouse for Educational Facilities, established in 1998, represents a new direction in leveraging funds. Rather than being an adjunct of one of the 16 existing clearinghouses, the Facilities Clearinghouse acts independently. It functions like the other ERIC clearinghouses and forwards abstracted literature directly to the Facility. It, too, is monitored by the ERIC Program Office.

All 16 clearinghouses—which operate on government funds—likewise participate in this leveraging activity. For example, every clearinghouse proposal includes an "in-kind" contribution of some sort by the host organization. These contributions take many forms: salary for the director or other staff, office space, computers, publishing resources, and the like. These in-kind contributions by host organizations add up to 12 percent of ERIC's total budget.[28]

In recent years, many of the clearinghouses have published books and monographs for sale to their constituencies. Ellie MacFarlane, a former member of the Reading, English, and Communication Clearinghouse (CS), described how this setup works: "Book publishing has been a really important part of this clearinghouse. The contract essentially gives you a franchise, and you can publish books and use the book sales to help fund clearinghouse operations. And that's what we've done."[29]

Garry Walz of the Counseling and Student Services Clearinghouse (CG) explained how his clearinghouse has taken an entrepreneurial approach to funding: "We use literally the equivalent of a revolving fund. All of our equipment, all of our computers, and all of our other media are purchased as a result of book sales, conferences, and consultations. It's a sizeable sum and we couldn't possibly do what we do without it."[30]

A final example of ERIC's leveraging strategy may be seen in the 650-plus ERIC Partners. Partners are professional associations, universities, consulting firms, business corporations, and the like, which have a vested interest in promoting the work ERIC does. They disseminate clearinghouse materials, advertise ERIC products, and sponsor joint conferences and projects—again at no cost to the government.

This leveraging strategy has enabled ERIC to creatively find a way to increase its service delivery without a corresponding budget. As Stonehill and Brandhorst observed, "Always modestly budgeted, ERIC was from the beginning forced to involve the private sector in an effort to 'leverage' various dissemination products and services."[31] It is a strategy that has served the system extremely well.

One example of leveraging that did not take root involved a proposal to charge royalties. Bob Stonehill, who was the point person for this strategy, relates what happened:

> In the early '90s we started thinking about the database and how people can't get it except by paying for it. And none of that benefit ever comes back to the program. So we floated the idea of charging royalties for commercial use of the database.[32]
>
> It was an interesting exercise in strategizing. We're thinking that it might win and it might lose. But at the very worst, we are going to raise an awareness that ERIC is a system that really needs more resources to do what it's being asked to do.

> So we floated a letter around saying "We're considering charging royalties. What's your reaction to this?" We got almost complete "Are you crazy? What's the matter with you?" kind of letters back.
>
> But it was okay because ERIC was in a desperate situation. We had lost control of our product. We were looking for ways to use revenues which were essentially from people who could afford to do ERIC searching so that we could underwrite other low cost alternatives to providing the database free.
>
> The American Library Association, which was most resistant to royalties, was also the most appreciative of our willingness to back off. So we kind of cut a deal with them—you support ERIC and help us think of ways in which the information in the database and at the clearinghouses and our publications can be more broadly and widely accessible. And if we can do that, then we don't need royalties.[33]

Thus ended a strategy that Stonehill confesses was worth raising but not worth fighting for. With the advent of the Internet, access through online providers would become less important in the future than it was in the early 1990s. As Stonehill concluded the story, "We were already thinking then that this is a cash cow that's going to be drying up in a few years. We saw that free access was in the wind."

Design Decision #3: Create a thesaurus

A thesaurus is at the core of most successful information systems. A database will be only as good as the thesaurus that guides it. To many, the thesaurus is an information system's heart and brain.

As early as 1965, Lee Burchinal recognized that if there was to be an ERIC, there needed to be a thesaurus: "Recent developments within ERIC necessitate the formation of a Terminology Control Group (TCG) which should lead to the eventual creation of a Thesaurus of Educational Terminology."[34]

One of the major design strategies incorporated into the ERIC thesaurus at its inception was that it be an authority list, not a dictionary. This means that only those terms actually used in indexing literature are included. ERIC's thesaurus is a working document, not an unabridged dictionary of terms.

A second design strategy of the thesaurus that has met the test of time is that changes to the thesaurus are decentralized activities, reflecting ERIC's own decentralized design. The clearinghouses, adjuncts, affiliate, ERIC Facility, EDRS, and Oryx Press are all invited to make recommendations for new terms or alterations to existing terms. A determination is then made as to whether the suggestion conforms to thesaurus rules and guidelines and would strengthen the use of the database.

Ted Brandhorst described the process by which terminology is added to the thesaurus in a 1996 interview: "You might wait two years for something and you might then be able to say that it appeared in 25 or 30 documents... some number other than one or two. It has to have been shown that it is going to be used for longer than six months."[35]

Changes to the thesaurus can occur as terminology evolves over time and as new trends are incorporated into the educational mainstream. Some terms readily enter the thesaurus; others are debated endlessly. When asked if vocabulary in the thesaurus is ever dropped, Brandhorst responded:

> You don't drop very many, but some will become obsolete. And some will become known by some other term. "Laser" didn't start out as "laser." It started out as some other lengthy term... and it was indexed that way until the word "laser" came into regular play.
>
> It is the same with other concepts as well.... The word "political correctness" was suggested as a term for the thesaurus. It's been around a good 13 years or so. Jim [Houston, the Facility lexicographer] dutifully created a scope note and a cross-reference. Well it turns out there is a lot of

> ill-feeling about the term "political correctness." People who don't like the concept of political correctness didn't like to see the term honored by the ERIC thesaurus. So they said, "This is a lousy term. Kill it. Get it out of there." What they are doing is trying to punish the concept by keeping the term out of the thesaurus... which is missing the point of the thesaurus. We are not making a value judgment by putting it in there.... We are trying to get people to accept that it is a legitimate term because it has been in existence for enough years and there is a body of literature using it. A month doesn't pass that you don't see a document that uses that term.[36]

The thesaurus has been revised and published some 13 times in the past 30 years. In 1980, a major four-year revision of the thesaurus was concluded, leading to the addition of some 500 terms and the dropping of 450 other terms. Jim Houston, the longtime lexicographer in charge of the thesaurus, reminisced about the 1980 revision:

> [The thesaurus] grew so fast and there were so many people doing the work and not enough time to really review what was going on. It got to be kind of a hodgepodge of terminology. You had terms like "instruction," "education," "teaching," and nobody really tried to define them or say this is what ERIC should mean when they talk about these words, when they use these words in their indexes.... So a major part of the effort was taking a look at the top of the hierarchies. Defining those terms and then working down.[37]

The major revision of 1980 resulted in the eighth edition of the thesaurus. Since that time, five lesser revisions have taken place. Each, however, has been a milestone for the ERIC system. Ted Brandhorst puts it this way: "Every time we give birth to a new edition of the ERIC thesaurus it's like giving birth to sextuplets. It seems like a major accomplishment. Something we have worked on for the previous several years... and then BAM! Here comes this big, thick volume out of Oryx Press."[38]

The end result of this work over time has been the creation of a thesaurus that has emerged as a standard in the field. As Houston proudly noted: "...Anyone who is familiar with the database knows about the thesaurus. If anything, large databases are going more and more to the so-called ANSI[39] standard. And ERIC, of course, was used to write that ANSI standard. All three of our displays are in that standard. And we're proud of that."[40]

Design Decision #4: Ensure flexibility

With hindsight, it can be stated without equivocation that ERIC's original design was forward looking for its day. Of chief note, was the inclusion of EDRS into the system. At that point in time, it was typical of information systems to provide bibliographic references, but to leave the acquisition of these references to the user. Brandhorst described the situation thusly:

> I've always thought that the early decision to include document delivery as an integral part of the system was an on-target decision. Not everybody did that when they designed these information systems back in the '50s and '60s. But ERIC decided that it had to complete the circle and provide people with ways of getting this material. It would have been disastrous if they had gone the other way, because this material that we are talking about—that they started with—can be so hard to obtain. So ERIC completed the loop on that and I think saved their hide in that department in the early years.[41]

As good as ERIC's original design was, the system would have died long ago were it not able to accommodate change. Among the major alterations that have been readily absorbed by the program are the following:

- Including journal articles in the database (1969)
- Lending the ERIC database to interested organizations (1969) and replacing the lending program with a sales program when lending became too complex (1970)

- Selling database tapes (1970)
- Replacing silver halide film for EDRS microfiche distribution with vesicular film (1974)
- Replacing paper tape with OCR (optical character recognition) for data input (1976)
- Adding a Level III document note to indicate that documents are not available on microfiche (1977)
- Requiring ERIC authors to sign copyright release forms (1977)
- Adding new fields to the database to improve its searchability and discrimination: e.g., publication type (1974, 1984), geographic source (1978), language (1978), government level (1978), and target audience (1984)
- Offering ERIC on CD-ROM (1985)
- Stepping up dissemination efforts through relationships with ERIC Partners (1989)
- Creating a marketing and publication arm for ERIC: ACCESS ERIC (1989)
- Creating adjunct and affiliated clearinghouses (1988, 1998)
- Offering full-text delivery of ERIC digests online (1990)
- Offering ERIC via the Internet (1992)
- Adding books to the database (1993)
- Offering full-text delivery of copyright-cleared documents appearing on the database since 1993 via the Internet (1997)

Had the founders of ERIC not created a system that was able to bend to fit these changing priorities, ERIC could not have kept in step with the times. It would have become anachronistic and ultimately obsolete.

Present-day ERIC

ERIC's flexibility coupled with its decentralized design has allowed it to survive in its many homes. In 1966, it had been a fledgling program within the Office of Education (OE). In 1974, ERIC was transferred with the rest of OE's research programs to the newly formed National Institute of Education (NIE) within the Department of Health, Education, and Welfare. When the newly created Department of Education was formed in 1980, NIE and the ERIC program were transferred to it. When NIE was reorganized in 1985, ERIC was transferred to NIE's successor agency, the Office of Educational Research and Improvement (OERI). Since 1995, ERIC has been a part of OERI's National Library of Education (NLE). In announcing this placement, Pat Coulter, who was at that time the acting director of ERIC, noted that ERIC's new administrative home within the National Library of Education is symbolic of the Department's commitment to providing a well-organized repository for education information, accessible to all those seeking to improve teaching, learning, and education decision making.[42]

Blane Dessy, director of the National Library of Education, concurs with Coulter:

> ERIC is really our biggest asset in terms of what we are trying to do with the National Library. ERIC forms a huge hunk of our national education information agenda because it's already done so much in terms of gaining a handle on the literature and making it available. ERIC is going to play a huge role in our future plans as we try to do even more.[43]

From its current perch in NLE, ERIC is working hard to exemplify the excellence that has long characterized its performance. In the paragraphs that follow, three ERIC staff members (one each representing the clearinghouses, the support contractors, and ERIC administration) reflect on what being a part of the ERIC community has meant to them.

For Jane Henson, of the Clearinghouse for Social Studies/Social Science Education (SO), ERIC is a source of pride:

> This is a wonderful community to be a part of, professionally and personally. ERIC, in the time that I have been with it, has allowed me to be on the "cutting edge."
>
> Certainly, in a community like Bloomington, [Indiana] or Champaign, Illinois, or Columbus, Ohio—with these large universities available—many of us who were trained in the library and information science field had the opportunity to remain within the structure of a large library environment. For whatever reason, we chose not to. And I'd like to think it's like the poem says, "Two roads diverged in a wood, and [we]… took the one less traveled by. And that has made all the difference."
>
> As far as the information science community is concerned, ERIC is revered. When you say you are with ERIC, not only do they understand implicitly what you are, they respect what you have done.… It's nice to be respected within your own community.[44]

Ted Brandhorst, the director of the ERIC Processing and Reference Facility, sees his years with ERIC as a solemn responsibility:

> It has [been]… a worthwhile humanistic enterprise. You could tell your staff that this is really helping to improve people's lives and prospects. Everybody has managed to imbibe some of that feeling. This is not just making cans of soup or something. This is doing something that has a longer life than that—and has a more worthwhile purpose than that.
>
> Also, coming from the library side of things, I early on had a motivation to see that things were saved for posterity—see that things were organized in such a way that they weren't lost. This fed that part of my interest. There is a kind of archival work that we do here—a history of time and place that will live on.

> Lastly, there has also been a feeling that I've again tried to instill in the staff because it's important: we will not be here forever; some other contractor will come along. We have had custodianship of a database for a period of time. We have had a database that represents the U.S. around the globe, and it's important that we take good care of it. We have [had] high standards in developing it and we will pass it along in good shape to whomever succeeds us.[45]

Bob Chesley, the director of ERIC from 1978 to 1982, reflected on his experiences at ERIC nearly two decades after the fact:

> Money was in short supply and did not match the high hopes and expectations of those who saw ERIC's potential. Yet, I never ceased to be amazed at the inventiveness and oftentimes sacrifice of the clearinghouses which would step forward to take on some new task of their own design or perhaps one suggested as politically necessary by Central ERIC.
>
> I take considerable pride in my association with those who were dedicated to see ERIC survive. They took pride in ERIC. Some even named their children ERIC.[46]

In the chapters that follow, we take a closer look at some of the major trends in ERIC's modern history that have led ERIC to this point in time. Appendix H contains a listing of the major milestones in that history.

Chapter 2

Under the Magnifying Glass

In 1986-1987 there occurred perhaps the single most significant event in the development of ERIC since its birth.... This was the ERIC Redesign Study.

–Bob Stonehill and Ted Brandhorst, 1992

ERIC in its early and middle years had some good people inside who believed in it and wouldn't let the antagonists steal its money.

–Art Cohen, 1/3/97

From the first chapter alone, one might assume that once founded, ERIC ran a smooth course. The system did indeed grow and flourish. However, there were significant bumps along the way.

By the 1970s, it had been decided that ERIC needed to broaden its scope and reach out to practitioners. The Office of Education established an outreach office specifically to address this need. Former ERIC director Bob Chesley describes the functions of this office as follows:

> Led by Tom Clemmens, the group funded research in how educational information is effectively transferred, designed a plan based largely on the highly successful Agricultural Extension Service, and initially funded three trial programs in South Carolina, Utah, and Oregon. "Educational Extension Agents," who were trained for the task, took requests for information from educators; did searches; helped sort through resulting information; and then helped plan, where needed, how to utilize the material. There were thousands of teachers and administrators and countless more students who benefited.[1]

The 1981 NIE-funded "ERIC Cost and Usage Study,"[2] (known widely as the King Report[3]) documented the success of ERIC's dual outreach efforts to researchers and practitioners. The report noted that ERIC was most widely used by college and university students, followed by administrators, planners, teachers, trainers, and counselors. Combined ERIC users consulted the database more than 2.7 million times annually.

The Cost and Usage Study also found ERIC to be a low cost/high yield program. In fact, when compared with other similar federally funded databases such as NTIS (National Technical Information Service), AGRICOLA, and MEDLINE, ERIC prices were the lowest in the industry.[4]

The ERIC of the early 1980s proved to be an extremely cost-effective investment for the government. Of the $136,000,000 researchers estimated that it cost to operate the ERIC system (including usage dollars), only $5.6 million was funded by the Federal Government. ERIC access points[5]spent nearly five times what the government spent to provide the public with access to ERIC. But it was the ERIC users who assumed the bulk of the costs through the fees they paid. Almost three-quarters of the total cost associated with development, distribution, and use was recovered from user fees.[6]

The Redesign Years: 1984–1987

Many observers of ERIC felt that the program—with its high usage rate and low costs—was in a position to coast along. The system was fulfilling its mission, hardly making a dent in NIE's budget. Therefore it came as somewhat of a surprise to many when, as ERIC's 20th anniversary approached, the Department of Education embarked on a major examination of the ERIC program. Dr. Chester (Checker) Finn, Jr., who was at that time Assistant Secretary for Educational Research and Improvement, very publicly questioned the ERIC system and led a full-scale investigation of the program. Kevin Arundel recalls these turbulent times:

> There was a period in which Checker Finn wanted to look at everything. We did some presentations with him about ERIC and what it was doing. He had envisioned ERIC as 16 boxcars linked together. I don't think he got the concept of the system. And he wanted to get rid of the ED's [documents]. He couldn't see any value in them. He thought ERIC really ought to focus on the journal literature.... I was appalled.[7]

Jeanne Rennie of the Languages and Linguistics Clearinghouse (FL) vividly recalls the time period:

> It was back in about 1986 or 1987 when Checker Finn was at OERI and Jim Bencivenga was the Head of Information Services, which at that time was the section of OERI under which ERIC fell.... They came up with this plan for restructuring the ERIC system. This turned out to be our defining moment.[8]

Actually, thoughts of redesign were in the air as early as 1984. A preliminary concept paper written in the fall of 1984 by NIE staff outlined a proposed plan for a review of the ERIC system:

> The Educational Resources Information Center (ERIC) system will be the subject of a program review by NIE during the period December, 1984–June, 1985. The review is to involve resource people from outside NIE and intensive staff work by NIE personnel.
>
> The purpose of this activity will be to provide NIE leadership with (a) an indepth review of the current capabilities, performance, and use of the ERIC system; (b) analyses of problems and potentialities of the system; and (c) a review of future directions... for ERIC development.[9]

After meeting as a working group[10]seven times between December 1984 and January 1985, a panel of internal NIE reviewers issued an initial report and recommendations on

February 1, 1985.[11] In September of 1985, the NIE staff review of ERIC was completed. What had started out as a rather innocuous, standard review concluded with waving red flags. John C. Egermeier, the Chair of NIE's Internal Review Group of ERIC, summarized the group's findings:

> ERIC will be most useful as a bibliographic resource to the extent that it provides clients of every major user type (academics, administrators, teachers) with convenient access to the kinds of materials they want. Its performance to date is somewhat uneven—academics being served reasonably well and practitioners finding ERIC use quite cumbersome—and is complicated by the fact that the vast bulk of clients receive services through some intermediary organization not under the control of the government-funded parts of the system. The government-funded components provide very limited client search services, are designed and evaluated in terms of intake and processing criteria rather than on measures of database use, and receive little feedback from users either in the form of data or direct advice. The decentralized organizational structure does not foster over-all system design or performance review.[12]

As alarming as these words must have sounded to ERIC staff at the time, it is interesting to note that the Executive Summary to the Final Report ended with a backhanded compliment:

> ERIC's highly decentralized design appears to have many features of a good "skunk works," such as substantial autonomy, extensive customer and staff development, "heroic" leadership, and central control over essentials. If so, this may partially explain ERIC's extraordinary productivity despite declining staff and program resources.[13]

The definite message left by the study report was that further investigation was needed. Setting the tone for that message was the fact that the new working group would now be called a "redesign" panel—rather than the less inflammatory "study" group.

While recognizing the need for an examination of the system, many were astounded by the preconceived notion that ERIC wasn't reaching out to a practitioner audience. In addition to the work being done by Clemmens' office, locally supported organizations such as The San Mateo Educational Resources Center (SMERC) had been offering "one-stop" educational information services using ERIC since the 1960s. Former director Chesley described the sentiment of the times:

> For those of us who observed first hand the joys of teachers who found material documenting almost exactly what they needed, or listened to administrators who could adapt proven ways to their desired end, it was perplexing to hear that the ERIC system was not serving, and not even capable of serving, practitioners. We heard researchers commenting on the unproven "junk" that was in lesson plans. But teachers had more classroom experience and could make judgments for themselves on what material needed to be modified… or tossed out. In return, the teachers, themselves, weren't all that complimentary about what they found in research reports! The truly important fact, missed by some, was that, despite mutual criticisms, the ERIC system was simultaneously serving the diverse needs of its differing clientele.[14]

Anxiety remained high, but not much new activity in this arena took place during the remainder of 1985. NIE itself underwent a reorganization, and ERIC was transferred to the newly formed Office of Educational Research and Improvement (OERI). With the start of the new year, though, attention was again focused on ERIC. At the Council of ERIC Directors (COED)[15] meeting on January 29–31, 1986, ERIC staff met with Finn and Bencivenga. Jeanne Rennie's notes of the time record the event:

> First encounter with Finn and Bencivenga; Finn says that ERIC is not serving a broad enough audience, that we have neglected practitioners, parents, the public, and the press; presents the 3 areas of concern he plans to have the Redesign Panel study—appropriateness of ERIC technology, quality of database contents, effectiveness of dissemination efforts.[16]

As a follow-up to that meeting, Dr. Finn testified before the House Select Education Subcommittee on February 19, 1986. At Finn's request, the COED prepared a special report for OERI to provide information on ERIC to the Redesign Panel. The report counterbalanced the negative connotations of the notion of "redesign" with its rather upbeat title, "Characteristics and Strengths of the ERIC System."

Things moved briskly after this point. On March 3, 1986, the 13 panel members for the redesign study were selected. They included COED representatives; OERI staff; and members of the education and library communities, the press, and state government.[17]

The establishment of the Redesign Panel came as a slap in the face to many clearinghouse staff. Donald Erickson, a long-term director of the ERIC Clearinghouse on Handicapped and Gifted Children (EC) and the sole representative of the ERIC system on the panel, explained the problem from hindsight:

> It would be a fair assessment to say that ERIC Clearinghouse Directors were less than enthusiastic about the creation of this Panel and the mission it was given to carry out. Several reasons can be cited for this attitude which are important to understand:
>
> - The ERIC system has been studied frequently during its history with the consequence that its strengths and weaknesses were well documented. Many of its weaknesses had been corrected by the system with little… additional funding. Responses to some of the criticisms leveled against the system could only be made with a significant infusion of new money that never was forthcoming.
>
> - The Redesign Panel was purported to be a "peer review group" and as such was thought to be able to carry out the rather extensive mission set forth for it by OERI. However, many of the members of the Panel were not so much "peers" in the information business as they were current, or former, potential users of the system. Although all Panel members

> were outstanding representatives of their respective professions, only a couple of them could be considered sophisticated information specialists. Consequently, a great deal of time was spent in acquainting the Panel with the operation of the system leaving precious little time to deal with the larger purpose and objectives outlined for the Panel.
>
> - The stated objectives and anticipated outcomes would have been difficult to accomplish even for a panel of true peers. But our charge as a panel was clearly beyond the capacity of a group that included persons who admittedly had little or no detailed and systematic knowledge of the ERIC system.
> - Several of the OERI stated outcomes for the Panel appeared to be ones for which they were seeking justification, that is justification for decisions they may have already made regarding the system. For example, it was quite clear that OERI was looking for support to reconfigure the structure of ERIC since the Panel was asked to "Think about and develop alternative models for structuring the ERIC Clearinghouse network."[18]

Larry Rudner, also a member of the Redesign Panel, shared a similar perspective with Erickson. This is all the more interesting in that Rudner, at the time of the panel's convening in 1986, represented the OERI administration. In 1988, however, he joined the ranks of the ERIC directors, heading up the Assessment and Evaluation Clearinghouse (TM). Here are his reflections on being a member of the Redesign Panel, a decade after the fact:

> I was on the ERIC Review Panel 10 years ago. It was a redesign committee put together by Checker Finn. Well… it was not really a committee. It was a justification to do what Checker really wanted to do. You can quote me on that one.
>
> The review committee had a lot of good people but it was very rushed. The first couple of meetings were slow, as the panelists got exposed to information science. There was only one information-type person on the panel as I recall. And then, poof! Make your recommendations and do something.… There was no time to digest, no discussion of the recommendations.[19]

Lynn Barnett, who was Chair of the ERIC Technical Steering Committee at the time, confirmed Larry Rudner's perspective: "[Checker Finn] wanted ERIC to be something that it isn't. He was always complaining about the quality of the database. He wanted it to be a peer reviewed database.... He only wanted the "good" literature in there."[20]

One of the first tasks Assistant Secretary Finn undertook in regard to the newly formed panel was to commission issue papers from two outside experts and COED on identified areas of concern.[21] These papers served as the jumping-off point for the study.

The first of the commissioned papers—Cynthia Parsons' "What Should Be Done with ERIC?"—was submitted to OERI on April 21, 1986. It was a scathing indictment. In her cover letter to Jim Bencivenga, she wrote:

> By and large, Jim, it's the quality of what's being done at the ERIC Clearinghouses which is very much at question. Also, I would argue that ERIC should not make up its own rules about abstracts (such as full sentences), but expect the abstracts to meet the standards of the rest of the research literature.
>
> Every time the schooling community falls short of the standards of the rest of professional thinkers, the peculiar world of academia gets another black eye. ERIC has been for some years now part of the problem and not part of the solution.
>
> Cheers to you and Finn for working on this Gordion-like knot![22]

James W. Guthrie and Trish Stoddart of the University of California, Berkeley, submitted a second commissioned paper to OERI in May 1986 on "Redesigning ERIC: A Modern Information System for Practicing Educators." This paper set out to examine how ERIC fared in response to a question posed by Lee Burchinal in 1973: "How does a document retrieval system hope to change the way kids learn?" Guthrie and Stoddart bluntly concluded that ERIC couldn't:

> In their current form, the vast resources of the ERIC system are virtually useless to practitioners. ERIC is valuable to researchers and academics, it functions well, it is cost effective, and it should be retained. There is, however, a need to develop an information system specifically geared to the needs of practitioners.[23]

The authors ended their paper with this stunning conclusion:

> Clearly improvements can be made to ERIC, e.g., upgrading its technology. However, far greater returns to the investment of federal funds could be obtained by promoting the establishment of a new system which can provide research-related information to practicing educators.[24]

Throughout May of 1986, OERI held a series of regional meetings to discuss the ERIC redesign. Jeanne Rennie's notes from the Eastern Regional Meeting reveal the controversial nature of the subject:

> Bencivenga attends Eastern Regional Meeting (in D.C.) and talks about his idea to separate database building and information dissemination functions; database building to remain at clearinghouses; dissemination to be handled by centralized, nonsubject-specific centers located in regions throughout the country; technical staff unanimously and loudly oppose this notion (and we never heard him mention it again).[25]

On May 22 and 23, the first meeting of the ERIC Redesign Panel was convened in Reston, Virginia, to examine the information assembled up to that point. Clarence M. Cawley, in his summary report of the panel meeting, succinctly encapsulated the mission:

> Charged with seeking ways to improve the operation of the Educational Resources Information Center (ERIC), the 12-member panel thoroughly examined and discussed the many

> aspects of this 20-year-old education database. But the overriding, recurring question was: Should ERIC be improved through a total overhaul, or should it be slightly modified by "grafting" on various improvements?"[26]

During the first day of the meeting, presentations were given by OERI, Central ERIC, clearinghouse staff, and a representative of the National Technical Information Service (NTIS), a self-supporting clearinghouse of the U.S. Department of Commerce. The second day of meetings began with an address by Dr. Finn, who had convened the panel. Cawley summarizes Finn's remarks thusly:

> He said that he had a "confused" feeling about the ERIC system. On the one hand, ERIC has done a "magnificent job" in reaching the research community. On the other hand, ERIC has had areas "grafted onto it" to reach a larger audience, but this may not be working as well as it should be. He added that information must be available to practitioners, policymakers, the media, and other audiences who are "radically different" from the research community.
>
> Dr. Finn said that he agreed "90 percent" with the James W. Guthrie paper—"Redesigning ERIC: A Modern Information System for Practicing Educators"—that ERIC is "virtually useless to practitioners, policymakers, media, and general audiences." He also praised a paper by Cynthia Parsons on "What Should Be Done With ERIC?" saying her analysis and critique are "absolutely on point" regarding the need to reach other audiences. The population has "grown and changed" and ERIC "needs to serve it, too," he added.[27]

At the end of the two-day meeting, participants were agreed on their charge, but not in their response. The meeting concluded with assignments into subgroups that would make recommendations on the three areas of inquiry: technology, dissemination, and quality control.

During the summer months, the panel subgroups prepared their recommendations. The dissemination subgroup[28] summarized their findings into a series of light-hearted observations that amounted to an indictment of the current system: [29]

> Observation #1: "People won't buy if they don't know what you've got."
>
> Observation #2: "People won't buy if they don't like what you've got."
>
> Observation #3: "Who are these people we're trying to reach?"
>
> Observation #4: ". . And what do they want from us?"
>
> Observation #5: "Can y'all hear us out there?"
>
> Observation #6: "Can't this be a moneymaker?"
>
> Observation #7: "How can we organize this outfit?"
>
> Observation #8: "How come none of us talked about the technology of dissemination?"
>
> Observation #9: "Tell me, Doc, how long do I have to live?"

The subgroup report concluded bluntly: "It seems that ERIC has been organized by what kinds of information—and in the formats—that people 'ought' to want, and not by what they demand on their own. ERIC needs to re-evaluate its entire philosophy of dissemination."[30]

On the issue of technology, there was better news: ERIC fared exceptionally well. In a commissioned paper, John W. Collins III, head of Harvard's Gutman Library, wrote the following:

> . . . the ease of use of the ERIC system that these commercial ventures provide disputes the argument that the system is too complex for the average user. ERIC is now available in a variety of forms, accessible by all types of computers through a number of systems, to anyone willing to pay for it. Even the costs associated with using ERIC are not prohibitive, as it remains one of the cheapest databases. Technologically

> speaking, ERIC would have to be described as state-of-the-art.[31]

The subgroup on technology[32] concluded: "Improvements in the technology of ERIC should be focused, not on research and development, but on new applications."[33] They put forth four suggestions for investment:

- CD-ROM
- Full-text retrieval
- Technology training
- Establishment of an ERIC 800 or 900 telephone number

The third and final subgroup on quality[34] had divided opinions. Their summary report offered the following conclusions:

> While panel members generally agreed that ERIC is doing a satisfactory job of collecting information across the spectrum of subject domains covered by its 16 clearinghouses (the quality of its coverage is good), there was disagreement about the general level of quality of the database, its usefulness to the education research community, and the degree to which the data should be comprehensive, i.e., encyclopedic, as opposed to selective. Panel member and reactor opinions ranged from those who believed that the system serves researchers only moderately well, because it includes too much low quality research, to those who believed that the strength of ERIC is its diversity and that the ERIC system should err on the side of inclusiveness.[35]

The subgroup made six recommendations towards improved quality:[36]

> 1) Standards of Quality. ERIC should establish and exercise uniformly strict staff review procedures to ensure quality control over the database as well as the summary and synthesis products produced by the clearinghouses. The database should be purged of redundant information.

2) Peer Review. There should be more use of reviewers (at no cost) to scrutinize documents to be accessed by the ERIC database. Peer review efforts should be focused also on clearinghouse-produced research syntheses and other analysis products.
3) Staff Training. ERIC should provide a system-wide training program to train/retrain clearinghouse staff members responsible for indexing and abstracting.
4) Selection and Coverage of Material. Central ERIC will approve the selection of topics and authors for major clearinghouse publications.
5) Inclusion of ERIC Publications. Publications developed with Federal funds [should] be in the public domain whether or not Federal funds are used to print the documents.
6) Monitoring the System. Central ERIC should develop new standards for clearinghouse monitoring. These standards should be sufficiently flexible to address the unique nature and needs of the clearinghouses.

It is interesting to note that in preparation for this report, a paper written by panelist David Plank suggested a major reorganization of clearinghouses. As Plank himself noted, his proposed design was very much like the model originally put forth in the 1972 Rand Report, which caused such backlash in the ERIC community at the time. Plank wrote:

> Among the advantages of such an organization would be a clearer distinction among the scopes of the various clearinghouses and a closer integration of the materials collection and dissemination functions of the ERIC system. This alternative organization would require an expanded and more active role for Central ERIC, in the systematic collection of research materials from targeted sources and in the oversight of the individual clearinghouses.[37]

Plank's alternative design was as follows: [38]

Central ERIC

Instruction	Instructional Support
Curriculum (K-12)	Administration
Pedagogy (K-12)	Policy
Exceptional Children	Law
Higher Education	Statistics
Adult Education	Evaluation
	Parents

In addition to Plank's design plan, a second alternative plan was put forth which offered three different configuration options. These design plans proved to be anything but reassuring to clearinghouse staff. When, on August 7–8, 1986, the Redesign Panel reconvened in Washington, D.C., for a second meeting, the clearinghouse issue was up for debate. The panel also examined issues related to the inclusivity of the database, the need for more training, and the idea of a "Secretariat"[39] that would take on the monitoring/coordinating/disseminating/evaluating functions then presently being performed by Central ERIC, EDRS, and the clearinghouses.

The meeting ended not with any firm decisions as to ERIC's future, but with the plan to have a group of reactors review the deliberations of both panel meetings and the commissioned papers and then report back to Assistant Secretary Finn. Finn would then announce his decisions in the 1987 ERIC RFPs (Requests for Proposals).

The materials for reactors were mailed out on September 5, 1986. Less than a week later, Bencivenga met with the ERIC directors. Rennie summarized the substance of the meeting in her notes:

> Bencivenga spoke to the group and presented his 3 alternative configurations for the ERIC system. When asked if the configurations were the work of the Redesign Panel, he admitted that he himself had devised them in collaboration with colleagues at OERI. COED pointed out that Bencivenga's

> letter to the reactors implied that the reconfigurations were the work of the panel, and that this was misleading. He promised to call all of the reactors the following day to clarify for them the source of the proposed changes in clearinghouse configurations.
>
> It was at this meeting that COED realized that our clearinghouses were in danger, and that we must take immediate action.[40]

And action they took. On September 23, the clearinghouse directors hand delivered a four-point plan to Dr. Finn. In a cover letter circulated to COED, Jonathan Fife wrote: "As Garry Waltz indicated to you on Electronic Mail, the meeting was very cordial and positive. Both Jim and Checker asked excellent questions and listened receptively to the presentation."[41]

The COED plan put forth the following approach: [42]

> We believe that improvements in the ERIC system are needed, and that those improvements should be addressed not toward form, but toward function. To that end, the plan calls for the following:
>
> 1) REVENUE GENERATION – Offset OERI costs by user fees.
>
> 2) PUBLICATIONS INCENTIVE PLAN – Fund all major clearinghouse publications on a cost-sharing or revenue-generation basis.
>
> 3) ACCESS ERIC – Create ACCESS ERIC, a new entity to coordinate systemwide products and services and to receive funds from other agencies and system users, as well as from OERI.
>
> 4) CLEARINGHOUSES – Build on the strength of the existing system, and also:
>
>   a. Expand the scope and name of the current Clearinghouse on Social Science and Social

Studies [SO] to include the arts and humanities not already covered by other clearinghouses.

b. Clarify current clearinghouse scope statements to make explicit the existing wide coverage of secondary education.

Almost simultaneously with the Four-Point Plan, the ERIC directors submitted a statement to OERI on "Guiding Principles for ERIC Design." (Note the deliberate choice of the word "design" rather than "redesign" in this title.) The paper began with this introduction:

> The statements which follow express the consensus of ERIC Directors, who reviewed most of the reports, papers and proposals by the Redesign Panel. The collective knowledge of this group adds still another source of information to this process.
>
> The Council of ERIC Directors appreciate the thorough and critical review of the materials by the Panel and thank them for the endorsement of the system. This paper adds data from Standing Order Customers, ERIC users, and earlier system studies that might clarify our fundamental ideas regarding what we believe ERIC should be.[43]

At the core of this paper were six guiding principles:[44]

1) An effective information system is comprehensive, covering all major educational areas and serving the needs of varied audiences and constituencies.

2) An effective information system is marked by a high level of user awareness and access.

3) Information about education should have an impact on educational research and practice.

4) The quality of an education information system is dependent on the professional quality of a system's staff.

> 5) Effective coordination of systemwide activities is essential in a decentralized information system.
>
> 6) Effective system decisions are made on the basis of financial and other costs in relation to expected benefits.

In making their recommendations, the ERIC directors reiterated the Four-Point Plan, but also gave a rationale for not going forward with proposed design changes with which they did not agree. To illustrate, in regard to clearinghouse structure, COED recommended that the arts and humanities be added to the ERIC system (point #4), but that no other changes occur. The paper cautioned against consolidation efforts, looking to the past for examples:

> Efforts at consolidation of clearinghouses should be tempered by evidence from past consolidation efforts (Note IR, EA, and CE consolidations in the past), which have resulted in decreased coverage, the emergence of gaps in coverage, and diminishing identification of key constituencies with ERIC.
>
> Consolidation should be cautiously considered, since it diminishes the sense of ownership among constituencies affected, and thereby decreases quality of acquisitions, dissemination channels, and linkages to user groups and intermediary information providers.[45]

In addition to its own mounted campaign, clearinghouse staff, their Advisory Boards, and other supporters started a letter-writing campaign to Congress. Congress responded almost immediately, as the following excerpt of a letter from five prominent Congressmen to Dr. Finn illustrates:

> Dear Mr. Finn:
>
> We understand that your office has recently proposed major modifications to the Educational Resources Information Center (ERIC) system; in particular, that a number of clearinghouses are candidates for elimination or consolidation. We are

> specifically concerned that such an action is being taken despite the absence of any conclusion by the ERIC Redesign Panel that the system's current configuration is in need of any major change.
>
> Furthermore, we have learned that you are considering three alternative plans for restructuring the ERIC Clearinghouse system—and that none of these plans includes the clearinghouse on languages and linguistics (ERIC/CLL)—the "foreign language" clearinghouse. We would be troubled to find any call to eliminate this clearinghouse in view of increasing American support for foreign language education.
>
> We feel it is important to remind you of a letter sent in July, from Secretary Bennett to House Education and Labor Committee Chairman Hawkins explaining the reorganization of the National Institute of Education. In that letter, Mr. Bennett stressed that the reorganization would in no way discontinue or impair any research, statistical, or improvement function vested by Congress in that department. It should also be pointed out that in OERI's reauthorization, the ERIC system was held harmless[46] for FY'87 and beyond. Therefore, there should be no need to alter the system to save federal funds...
>
> We would urge you, therefore, to abide by the recommendations of the ERIC Redesign Panel, and to avoid making any changes in the system that would compromise its current effectiveness.[47]

All of the information emptied into the OERI hopper, emerged in the form of the landmark paper "ERIC in Its Third Decade," authored by Jim Bencivenga, director of Information Services at OERI."[48] The paper set forth four tasks: [49]

> 1) [To] provide a brief background and general description of the ERIC system;
>
> 2) [To] discuss the system's strengths and virtues;

3) [To] discuss the system's weaknesses, particularly as identified and distilled from the review of the past eight months... ; and,

4) [To] outline broad shifts in the conceptual underpinnings of ERIC.

The acknowledged strengths of the ERIC system noted in the document were those that were highlighted in Chapter 1. They included:[50]

- The diverse nature of the ERIC database and the decentralized aspects of its organization
- The system's ability to leverage non-Federal funds
- ERIC's "demonstrated creativity, adaptability, and versatility," which have enabled it to be "responsive to changing user needs, developing and expediting new products, and responding to new OERI priorities"

Bencivenga's major indictment of ERIC, as expected, was that the system catered strictly to the research community and made no effort to reach out to the larger educational community. The paper was succinct in its criticism: "There is a widespread perception that ERIC is a 'closed club' whose complicated systems of access, content, and retrieval are designed exclusively for members of the education research and information science communities."[51]

The listing of shortcomings ended with an analogy: "ERIC is more like a well-stocked warehouse of exotic garments than a mass retailer to the millions who need and want the education equivalents of shirts and socks as well as the occasional feather boa."[52]

To correct what the paper viewed as systemic weaknesses in ERIC (while building on its recognized strengths), Bencivenga proposed three major philosophical shifts in policy:

1) From serving primarily the needs of academic researchers to giving "proper attention" to the needs of the diverse education community
2) From stressing an archival role to greater emphasis on dissemination
3) From highlighting the collection of unpublished materials to a more balanced representation of the literature

To promote this new philosophical mission, the paper called for partnerships with private and public institutions, the creation of adjunct clearinghouses, and (as the Council of ERIC Directors had urged), the creation of ACCESS ERIC, "a new system component [that] will coordinate and market system-wide products and services and train users in how to use the ERIC system."[53]

After the threat of elimination of the Languages and Linguistics Clearinghouse the previous year, and talk of reducing the number of centers to as few as five,[54] the clearinghouses must have breathed a collective sigh of relief upon reading that "All subject areas covered by the present system will be retained. Future ERIC clearinghouses will be organized around major functional categories relevant to the information needs of the next decade."[55]

In his concluding remarks, Bencivenga waxed metaphorically about his vision for ERIC:

> The ERIC of the past twenty years has resembled an educational garden, one largely hidden, too often uncultivated, too selective in its produce, and not extensively harvested. Our vision of ERIC in the next decade contrasts sharply with that of its first two. We plan a continuously harvested 'hothouse' of information and ideas.[56]

Following a public meeting on December 18, 1986, the deadline for comments from interested parties was set for January 16, 1987. Hundreds of letters were received.[57] Not surprisingly, many clearinghouse staff were offended by the much-repeated criticism that the ERIC of 1986 was ignoring practitioners. In their response to Mr. Bencivenga, Stansfield and Rennie of the Clearinghouse on Languages and Linguistics (FL) refuted the charge head on:

> Although we agree that many practitioners are unaware of ERIC, the statement that the system does not "pay purposeful and regular attention"... to the information needs of practitioners is not borne out by the facts.... The target audience field was created in 1984. All practitioner-oriented materials added to the ERIC database since 1984 are so 'tagged' and in addition, RIE documents from May 1975 through October 1983 were reviewed and the Practitioner Target Audience field added to all appropriate accessions. There are currently more than 50,000 ERIC documents[58] specifically targeted for practitioners, 641 of which are ERIC Information Analysis Products prepared by the clearinghouses. This hardly suggests a lack of attention to the needs and priorities of this group.
>
> A brusque shake up of the ERIC system may 'shake up' many of its long-time users. While we encourage changes that will allow ERIC to reach new audiences, we do not want to lose those we have served well for many years. Our goal is not to change ERIC's public, but to add to it.[59]

Chesley remembers how politics swayed people's perspective on the issue:

> It was clear to whom the upper levels of NIE/DOE were listening. It was not the practitioner. And others from within wanted a share of ERIC's budget, the largest chunk of money in the organization(s) where ERIC found itself. There were few allies in high places. No amount of testimony or even hard data about practitioner use of ERIC seemed to make a difference.[60]

Even before comments were due back to OERI, Bencivenga sent out a second mailing on December 22, 1986, with "additional material regarding improvements in the configuration of the

ERIC network." These "additional materials" served to alert all the clearinghouses that they were at risk:

> We estimate that the ERIC system will require from twelve to twenty clearinghouses to span… domains adequately.
>
> It is well to remember that ERIC has not been a static organization. Over the course of its first two decades, it has changed to meet the needs and demands of new audiences. ERIC was established in 1966 with twelve clearinghouses. By 1972, the number had grown to twenty. During the following four years, with several mergers and closings, it was reduced to the sixteen clearinghouses that constitute the current structure. Please recognize, therefore, that this is an opportunity to scrutinize a clearinghouse arrangement that was last changed at the outset of ERIC's second decade to see how best it might be organized for the third decade.[61]

If this exercise had been purely intellectual—without the fear of dissolution—this challenge might have been well received. Dianne Rothenberg notes, however, that ERIC staff were too engrossed in survival to avail themselves of what might have been an opportunity for self-improvement: "I think for ERIC to rethink its design internally and to propose a better plan to OERI would have been good. But we didn't take that opportunity. What we did was see it as a threat and resist as a system. I think that was unfortunate."[62]

The resistance expressed by ERIC staff and other interested parties found its way into yet another proposed redesign document.[63] This one was issued by Jim Bencivenga on March 27, 1987, and distributed to more than 2,000 individuals. It proposed three major shifts:

1) The establishment of ACCESS ERIC, adjunct clearinghouses, and ERIC Partners
2) Two changes to the clearinghouse structure: forming a clearinghouse on School Professionals (which would combine the scopes of Counseling and Personnel

Services (CG) with Teacher Education (SP)) and the creation of a clearinghouse on Statistics to be established and operated by the Center for Statistics within the Department of Education

3) Name changes for seven of the clearinghouses

The first suggestion was well supported both within and outside ERIC. The only reservation—be it a major one—was that without an increase in budget, needed funds would be taken from the clearinghouses to support ACCESS ERIC. Don Erickson, in testimony later that year before the U.S. House of Representatives Subcommittee on Select Education, summarized COED's thoughts on the subject, as well as his own personal involvement:

> I am delighted that COED, the ERIC Redesign Panel, and OERI have examined, modified, adopted and are now promoting the ACCESS ERIC idea because I am convinced that it is an idea whose time has come. However, I am deeply concerned about the way in which this idea becomes implemented. There is probably no one in the ERIC system who wants to see ACCESS ERIC become a reality more than I do, but I cannot in good conscience endorse creation of an ACCESS ERIC at the expense of the budget of other system components.
>
> The success of ACCESS ERIC is dependent, to a large degree, on the cooperation and good will of all ERIC components. If funding for ACCESS ERIC is perceived as coming out of monies which heretofore have been allocated for clearinghouses and the ERIC Processing Facility—i.e., monies that are already in extremely short supply—it is virtually guaranteed that cooperation will not be forthcoming.[64]

Reservations about ACCESS ERIC paled next to reactions about the proposed reconfiguration design. While the content areas represented by the 16 clearinghouses would remain the same, what was not anticipated was that the content of two clearinghouses would be merged, making room for a new clearinghouse on statistics that would be housed in and operated by the Department of Education.

The Clearinghouse for Languages and Linguistics (FL) spoke for many in its reaction paper to the March 27 redesign proposal:

> Our most serious concern... is the proposed merger of two clearinghouses: the ERIC Clearinghouse on Teacher Education and Counseling and Personnel Services. No rationale is provided for the merger, and the decision to combine these two particular clearinghouses seems, at best, arbitrary. There is little, if any, overlap in their scope areas.... The constituencies of both clearinghouses will most certainly be dismayed by the new configuration, and rightly so. A single clearinghouse cannot do justice to the very broad fields of teacher education and counseling and personnel services.... Many long-time ERIC users will be confused and/or alienated by a merger that appears to diminish the importance of, or even to ignore completely, the area of education of most interest to them.
>
> Our final concern... relates to the proposed clearinghouse on education statistics.... How would a clearinghouse that is actually part of the Department of Education have the same status as clearinghouses that are operated on contract by private organizations?[65]

COED echoed these sentiments. In their response letter authored by Don Ely, they wrote:

> The yoking of the teacher education and counseling clearinghouses into a "school professionals" clearinghouse for purposes of database development in the ERIC system is, in a word, bizarre. COED regards this proposed collapsing of two clearly different clearinghouses as ill-conceived and arbitrary. The present configuration should stand.[66]

Education Daily reported the growing acrimony within the ERIC organization over this latest redesign proposal:

> The Education Department is drawing fire for its plan to combine two information centers as it tries to improve the operation of its network of clearinghouses, broadening their appeal.
>
> The proposed consolidation may turn out to be the most controversial change for ERIC recommended by ED.… The ERIC Council of Directors… said the council would ask Congress to pressure ED to alter the plan. Congressional approval is not needed for the changes, however.[67]

The clearinghouses banded together in a fight for what they perceived to be their very integrity. Bob Stonehill reflects on this battle call:

> The first politics I dealt with [when I came to ERIC] were the politics of "ERIC stinks" and needs to be broken into a million pieces and put together in a totally different way that would ensure the quality of every single document in the database and the efficiency of its administrative operation, and its service to teachers and so on. Well, the last way to do anything like that is by demolishing what you do have and what people have a lot of pride in.[68]

As Dorothy Myers wisely observed, "Nothing is more unifying than trying to pull the rug out from under you."[69] The administration's actions only served to rally the clearinghouse troops, as Garry Walz remembers:

> The moral... is that no matter how professionally sound you are, you've got to be politically active, in the best sense. Politically active means developing constituencies of support which you need in a democracy. Virtue is not its own supporter. If you think you're right, you've got to work for it.[70]

And work for it they did. The COED Executive Committee developed a three-point plan of attack:[71]

1) Meetings and demonstrations of ERIC for Senators, Representatives and/or their legislative staffs

2) Direct contact with local Congress people in their home or Washington offices by ERIC directors and staff
3) A letter writing campaign generated by each clearinghouse among its constituents

Fighting for what was felt to be its very survival, the newly politicized ERIC began to "work the system" with results. On April 13, 1987, *Education Daily* reported that members of the House Education and Labor Committee sent a letter to Secretary of Education Bennett "asking him to delay the restructuring of the... ERIC network until Congress has seen the details of the plan." Four days later, *Education Daily* reported that Congressional staff met with OERI staff, and that although no promises were made, OERI seemed to be showing flexibility on its decision to merge the two clearinghouses.

Dianne Rothenberg of the Clearinghouse on Elementary and Early Childhood Education (PS) recalls these days as "one of the few times I saw in the directors work with a single purpose in mind, i.e. survival."[72] The directors spent so much of their time presenting their case to Congress that many spent more time in Washington than at their own clearinghouse. Jeanne Bleuer of the Counseling and Student Services Clearinghouse (CG) provided this anecdote about her boss, Garry Walz:

> The funniest thing happened during that time while Garry was working so hard for the ERIC system. He was gone a lot in meetings so we didn't see him a lot at the clearinghouse. One day we got this letter asking for this and this and this information. At the bottom [of the letter] they wrote, "Will you please send us a copy of your Director?" Of course, they meant directory, but we were thinking, "Yes, we'd like a copy of our director, too!"[73]

Political pressure coupled with a letter-writing campaign gave the clearinghouses the support they needed to influence OERI. In May 1987, OERI announced that:

> In consideration of respondents' comments and in cooperation with the field, we are now proposing to retain both [the Teacher Education and Counseling and Personnel Services] clearinghouses. In cooperation with the education community, in response to public comments, and as not to confuse users, we are not proposing any name changes [for the clearinghouses]."[74]

Throughout late spring of 1987, ERIC staff kept the momentum flowing. In an internal clearinghouse memo, Jeanne Rennie recounts her experience in becoming an activist:

> They [staff on the House Select Education Subcommittee] seemed to be very interested in everything we had to say, and they asked many questions. In addition, [staff director] Maria Cuprill gave us a lesson on becoming political. She told us that we must leave our years of political naivete behind us, and start talking to the people who are in a position to help us. She indicated that she and her staff were the best place to start.... The committee can speak for us, and do so from a position of authority and without endangering our individual interests. She encouraged us to get to know them and to keep in touch with them.[75]

Politicization culminated in Congress's first oversight hearings of the ERIC program. On July 30, 1987, the House Select Education Subcommittee of the Committee on Education and Labor convened to review the status of the ERIC program and to hear administration proposals for ERIC's redesign. The Honorable Major R. Owens, chairman of the Subcommittee, set the "pro-ERIC" tone for the hearings with these introductory words:

> Today we are convened to review a very significant and a very successful program of the Office of Educational Research and Improvement, the Educational Resources Information Center, which is generally known as ERIC.
>
> Despite the fact that the 21-year old Educational Resources Information Center has been slowly strangled by low budgets, it is alive and performing very well. ERIC has been correctly

> described by Secretary of Education William Bennett's own staff as the world's most visible social science database. Since ERIC is not broken, I am requesting that the Secretary take steps to stop his staff from destroying ERIC by insisting that ERIC must be fixed.[76]

Lynn Barnett, the Chair of the ERIC Technical Steering Committee at that time and one of the witnesses to testify before the House Select Subcommittee, provided this first-hand account to fellow ERIC staffers:

> …I wanted to… give you a bit of the flavor of the hearing yesterday chaired by the Hon. Major Owens of New York, and to let you know what I said on your behalf.
>
> First of all, the hearing lasted from 9:30 until 2:00 (two hours longer than anticipated), and there was standing room only during the morning session. Four of the six members of the House Subcommittee on Select Education were present—which seemed to us extraordinary given the Iran hearings and summertime schedules.
>
> The hearing was organized with 3 panels of witnesses: an Administration panel (Finn, Horn, and Darrell[77]); an ERIC panel (Ely, Erickson, and me[78]) and a "user" panel (a librarian from Northwestern University, a reading specialist from a Maryland public school, a professor of higher education from Howard University, and—the ultimate ERIC user—Chuck Hoover[79]). Hoover had been scheduled to be on the first panel, but Finn preferred otherwise. All of the testimony from the user panel was so highly favorable that we were ecstatic. I wish you all could have been there to hear the wonderful pats on the back for us…. The visibility that ERIC got—finally—was exciting, and my nerves are now back in place.[80]

As a result of the hearings, Congress mandated that "the structure of the 16 clearinghouses must remain intact."[81] As Dianne Rothenberg notes, "the significance of having the number, names, and scopes of the clearinghouses written into legislation[82] was a watershed event in ERIC's history."[83] No longer would the threat of merger or dissolution linger as a black cloud over the clearinghouses. ERIC was now a line item in the nation's budget. Garry Walz provides the personal slant on what this meant:

> The phrase was to "hold harmless" the 16 clearinghouses. [This] meant the legislation enabling ERIC indicated that you could not have less than 16 clearinghouses. They would have had to have gone back and changed the whole legislation—and not just do a new appropriation—if they were going to try to move from 16. That is what has maintained the integrity of the system.[84]

Ted Brandhorst summarizes the redesign years as a kind of "tough love" growth experience for ERIC:

> When you are attacked or beleaguered sometimes you get stronger for it.... I think that ERIC has had to rally its survival instincts over the years because it has occasionally had administrations that wanted to do away with it. And that has meant that ERIC has had to "circle the wagons" in order to survive. And that has led to a certain strength. It has marshaled its forces to repel boarders. It has worked. Checker [Finn] wanted to do away with ERIC and the clearinghouse directors were at war with him over this.... But ERIC got so many users out there to come forward with material to the Congress and material to the Agency. Finally it became an overwhelming flood of testimonials and they were just unable to combat that kind of thing. The Congress... rallied behind that, prevented anything terribly destructive from happening to ERIC. As a matter of fact, I think it was that kind of attack that led to ERIC's budget becoming a specific line item in the budget. ERIC emerged from being attacked more protected than when it went in.[85]

The Legacy of the Redesign Period

ERIC began Fiscal Year 1988 reinvigorated in its mission. Clearinghouse staff no longer felt that their jobs were in danger of being dismantled. Administration and staff were unified in a shared vision for ERIC that included the creation of ACCESS ERIC, adjunct clearinghouses, and ERIC Partners. For the first time, the RFPs for all 16 clearinghouses were let at the same time—in August 1987.

Celebration of ERIC's Congressional triumphs was tempered by the fact that ERIC's budget received no increase in dollars. The reality of having to increase the program's scope out of the same $5.7 million budget was universally disappointing. Former ERIC director Bob Chesley recalls these difficult times:

> In the mid to late 70s the Department (originally NIE) budget started out at about $160 million and steadily declined to around $60 million. ERIC's $4.5 million increased slightly, not so bad in relative terms. But it was barely sustaining the operation of the system in a highly inflationary period. Discussions with Don Ely and his Technology Committee and with Kevin Arundel and Ted Brandhorst about technological improvements brought few fundable proposals that would not gut perceived necessary system functions.[86]

In fact, these years were characterized by former ERIC director Chuck Hoover as "The Battle of the Budgets."[87] In June of 1987, COED had presented Congress with a request for $10 million.[88] At the July 30 oversight hearings, this figure was discussed with what seemed like the possibility of it becoming a reality, as the following testimony reveals:[89]

> Mr. Owens: What would you need to operate? What kind of budget do you project?
>
> Mr. Ely: The amount we feel would be necessary would be about $10 million in total, which is about $4 million more than the current budget.
>
> Mr. Owens: I think that's a conservative figure. It doesn't shock me at all. [Laughter.]
>
> Mr. Ely: I guess those of us in the service professions live with smaller numbers than those in other sectors. But we arrived at

> that figure by looking at the last five years and determining that we were really short about $200,000 for each of the last five years—the last ten years, actually.
>
> Mr. Owens: For that same $10 million, do you think the ERIC clearinghouses could meet the requirements as stated by the Secretary?
>
> Mr. Ely: ...We are accustomed to working with limited funds, and I believe we could.

The $10 million budget did not materialize. Disheartened and no longer content to accept a $5.7 million budget indefinitely, ERIC staff again took up the challenge. At a Congressional appropriations hearing held on May 4, 1988, ERIC staff gave eloquent testimony on the need for increased federal funding. At this point, COED was asking for a more than doubling of the budget—from $5.7 million to $12 million. In his testimony on behalf of COED, Jonathan Fife stated the following:

> It should be clear that ERIC has been grossly underfunded and that it can adequately respond to traditional expectations and the new OERI initiatives only with additional financial support. ERIC is a proven success that for more than 20 years has linked millions of concerned Americans to the education literature. Congress and the Administration both have a responsibility and obligation to maintain the viability of this dissemination system so vital to the success and improvement of our schools. We urge this Committee to recommend the additional funding for ERIC so it can reach its true potential as it enters its third decade of service to American education.[90]

Unfortunately, the ardor of the testimony had no effect on the budget.

The advent of ACCESS ERIC and its accompanying $500,000 budget brought the situation to crisis proportions. At the 1989 Annual Meeting of the American Educational Research Association (AERA), both ERIC director Bob Stonehill and Facility director Ted Brandhorst presented papers designed to generate professional support for increasing ERIC's budget. In his presentation, Brandhorst observed the following:

> ...ERIC simply did not have the resources to expand its coverage. It dreamed and it hoped and it floated trial balloons, but then it always had to find some reason for not realizing the dream. In the early days, ERIC was not so open about these reasons. It somewhat embarrassingly made up excuses.... It is now only in recent years, when the resource pinch has gotten so severe, that ERIC has managed to bring itself to speak frankly about the reasons for its failure to exercise true bibliographic control over the literature and other resources of education—the lack of mandate from the top (of the agency) pertaining to breadth of coverage, the lack of funding to match such a mandate.[91]

At the clearinghouse level, staff rallied their constituencies. Using materials developed by The Coalition for ERIC Support, ERIC subscribers were urged to conduct a Congressional letter-writing campaign. An accompanying fact sheet provided users with an update on the situation:[92]

What Is Happening to ERIC?

The ERIC system is in jeopardy. Why? Because ERIC can no longer function effectively on the meager budget allocated by the Federal Government for operation of the 18 contracts that support the system. For the past 10–12 years, the ERIC system has been allocated about the same amount of money each year, averaging around 5 million dollars per year. With no provision for inflation, this means that the ERIC budget has in reality been declining for over a decade. If an inflation factor of only 5% were assumed for a period of 10 years, that amount would total $2,500,000 or approximately half of the current budget.

During the early to middle 1980s, ERIC accommodated the ever decreasing funding situation by devising shortcuts, streamlining technical operations, and generally relying upon the experience and wisdom of its dedicated and highly tenured personnel. However, this "accommodation" proved disastrous, because the more ingenious ERIC became at survival, the more complacent the funding agency became about increasing the budget. The end result is that in addition to a lack of funds, ERIC is currently suffering from a lack of tenured technical personnel, for they are burning out or leaving at an alarming rate.

ERIC has reached the end of its tether. The system can no longer provide the same services its constituencies have come to expect. There has been a slow but steady decline in services.

The FY90 appropriations hearing was held one year to the day from the FY89 hearing.[93] COED had again estimated that it would take $12 million to responsibly fund the ERIC system. In the concluding remarks to his testimony, Jonathan Fife, director of the Clearinghouse on Higher Education (HE), appealed to Congress:

> The conclusions in 1989 are the same as in 1988. There is a certain irony in the underfunding of ERIC. While the Department of Education has recommended a slight increase in OERI funding, it certainly is grossly inadequate for the needs of the ERIC system. As OERI increases the visibility of ERIC, as the public demands more services, and as education requires greater dissemination of knowledge, user dissatisfaction for ERIC will increase and ERIC will continue to be seen as being unresponsive. The system continues to be programmed for failure. This vicious cycle must stop. If the Administration refuses to accept its responsibility for leadership in this area, then Congress must demonstrate its willingness to improve the dissemination of education information.[94]

While it fell far short of the requested $12 million, ERIC's FY90 budget did receive an increase of $1 million. In the years since 1990, ERIC staff have continued to use their hard-earned political savvy to bring their case before Congress. In FY91, the budget held at approximately $6.7 million. Another million was added to the budget in FY92. In FY95, the budget was raised to $8 million. The following year, another $1 million was added. In 1997, the budget increased slightly to $9.2 million. In 1999, where this part of the ERIC story ends, the system's budget is set at $10 million.[95] As stated earlier in this section, this is the amount originally requested by COED in 1986.

Though the fruits of their efforts ripened slowly, ERIC staff garnered political expertise. Larry Rudner, for example, still regularly meets with Congressional staff on behalf of the ERIC program. By working the system as they have, Rudner and other ERIC staff have helped maintain the program's survival. The fear of dismantling that had loomed large in the mid and late 1980s gradually faded in the 1990s. While there will always be threats and challenges to the system, survival is no longer an issue. This chapter concludes with a quote from Art Cohen, who has been director of the Clearinghouse for Community Colleges (JC) since the start of ERIC in 1966:

> ERIC is now a big gorilla and, internationally, people know that it is not to be messed with.... ERIC has a lot of friends in the professional community and on the Hill. People know about it. From a political standpoint it seems to be in better shape now than it ever was.[96]

Chapter 3

ERIC's Evolving Mission

ERIC's mission has changed. ERIC has become more user-oriented, as far as getting more of the educational community involved in the program. Otherwise, it might not have survived.

–Pat Coulter, 7/11/97

ERIC has become a tool for the masses.

–Larry Rudner, 9/4/96

As ERIC approached its third decade, there was great debate within the system as to what the program's mission ought to be. Indeed, the heart of the redesign effort described in Chapter 2 focused on this issue. When ERIC began in 1966, there was wholehearted agreement on its mission: the database was created to capture fugitive education publications and make them available to the research community.

It did not take long, however, for the concept to broaden. In July of 1967, ERIC's name was changed from the Educational *Research* Information Center to the Educational *Resources* Information Center. Likewise in 1974, RIE changed from *Research* in Education to *Resources* in Education. These early name changes were more than symbolic; they reflected ERIC's conscious decision to widen its scope.

An Archive or an Information Center?

ERIC began as a database in the traditional sense. As a depository, it could well be defined by this 1963 definition:

> A depository is primarily a clearinghouse for documents; in general, it does not try to glean information from the

> documents it handles, but merely provides appropriate documents to users.[1]

ERIC's success as an archive has been no small achievement, as noted by Blane Dessy:

> I think [ERIC's] biggest achievement is the fact that it has actually been successful at creating the education database of the world. It started from nowhere and has grown into this tremendous database, beautifully done, indexed and abstracted—probably better than anybody else could have done. Think about the fact that we've somehow captured all that education information in a coherent way that makes sense to users. It is a tremendous achievement. We got hold of the literature and [we] mastered it.[2]

But even as an archive, early on ERIC began to expand its mission to fit the times. In the beginning, it was universally assumed that ERIC would be the database reporting arm for research conducted by the Office of Education. With time, though, people began to question "What is it ERIC is covering in the education world?" As Ted Brandhorst notes, this question remains open to interpretation to this day since there is no clear vision statement on the topic.[3]

In a 1982 paper, Chuck Hoover and Ted Brandhorst provided an historical analysis of how the system's focus on content expanded:

> Initially, ERIC concentrated on the report literature generated by the funding of its parent agency. The first documents were virtually all of this type and they dictated the nature of the early database and the content of the ERIC Thesaurus, which was being developed from the initial raw indexing efforts. In fact, one of ERIC's first major compilations was an effort to bring the then known "backlog" of documents under control. This effort resulted in the document entitled *Office of Education Research Reports, 1956–1965.*

> Information systems have a natural appetite for their raw materials, however, and while ERIC's has been modest over the years, it didn't take it long to attempt to fill the need for an abstract journal dealing with the journal article literature. In 1969, the first issue of *Current Index to Journals in Education* (CIJE) appeared. Since that initial rapid expansion, however, ERIC has looked only speculatively at the other kinds of educational resources that might conceivably come under its wing and become new files. It was easy to bypass the commercial hardbound book output of the traditional commercial publishers, so well covered by the conventional library system, but many other possibilities exist and have been foregone due to a combination of a shortage of funding and lack of a clear mandate for ERIC to increase its coverage.[4]

One decade later, in 1993, books no longer were bypassed; they became an official part of the ERIC database.[5] As explained in the 1994 Annual Report, "This literature had not been covered previously because it was copyrighted, could not be included in the ERIC microfiche collection, and was already being indexed and catalogued through conventional library mechanisms. This policy change was made as a service to ERIC database users, who expect an education literature search to include books and who value the detailed level of indexing provided by ERIC."[6]

Today, the focus of the debate on inclusion centers on nonprint materials:

> Questions remain about what ERIC's role should be in acquiring, indexing, and even disseminating nonprint materials, including but not limited to videotapes, multimedia packages, computer diskettes, CD-ROMs, interactive laserdiscs, etc. While it is clear that ERIC should pay attention to indexing such materials, cost-effective procedures for copying and disseminating them appear problematic.[7]

In addition to expanding the media on which the database draws, an accompanying expansion has occurred with reference to the type of materials archived in the database. When ERIC's name changed to include all educational resources, not just research-related ones, the topics included in ERIC naturally broadened.

In 1991, the issue of what "education-related" really meant came to a head in a debate at an ERIC Directors' Meeting. The "battle" to expand the definition was led by the Clearinghouse on Rural Education and Small Schools (RC), then under the co-leadership of Craig Howley and Todd Strohmenger. Todd Strohmenger, Susan Imel, Dianne Rothenberg, and Phil Piele joined Craig Howley in forming what Howley called the "A" Team in the debate.[8] Ted Brandhorst, the designated "custodian" of the database, stood firm against the expansion movement.

The question set forth for debate was: "Should ERIC include materials of interest to educators even though the material may not be directly about education?" For many on both sides of the question, there was a feeling that, to some degree, ERIC already did. A 1987 article in *Database* magazine had this to say on the subject:

> The Educational Resources Information Center database (ERIC) is sometimes referred to as one of the "mother files." This phrase can be taken several ways. One interpretation is that ERIC is all-embracing, one of the major files covering a broad range of knowledge.... Its scope includes the social and behavioral sciences, and the helping professions. In addition to being the basic file for the field of education, it is also a backup file to be checked when executing a comprehensive search in a variety of disciplines, including Psychology, Sociology, Child Development, Gerontology, Ethnic Studies, Women's Studies, Urban Development, Community Relations, Public Administration, Library Science, Social Work, Counseling, Physical Therapy, and Rehabilitation.[9]

Drawing on this accepted belief, Howley drafted a position statement that his clearinghouse circulated in September 1991:

> The field of education draws its methods and its objects of concern from diverse disciplines.... Avoiding overlaps with other disciplines should not be a selection criterion: Within the field of education proper, overlap is the norm, not the exception. To operationalize database integrity at the avoidance of overlap, imposes a standard that misrepresents the field.[10]

The Facility, represented by Ted Brandhorst, responded to RC's position statement with a hard-line comeback: "I thought the plan was to meet with Central ERIC to discuss this issue, with real life examples of "troublesome" documents in hand. The fat is now in the fire. Let's hope that we get some light from the heat from what is to follow."[11]

Further, in a response paper sent to clearinghouse directors on October 3, 1991, Brandhorst laid out the Facility's position:

> ERIC has had a set of selection criteria that has served it, perhaps not perfectly, but well, for the past 25 years. Now RC has promulgated a "position statement" (sent to all clearinghouses on 9/24/91) that recommends radically changing these criteria.
>
> RC is now pursuing this "position paper" route in order to be permitted to put in the ERIC database the kind of document that the Facility has been returning them. Attached to this memo are the title pages of some actual documents that RC has in the past input for RIE, but that were returned to them for not being education-related.[12] A close examination of these documents fails to turn up the slightest mention of education, schools, teaching, students, or any other education related concept or linkage.[13]

First thing in the morning (8:15 a.m.) of November 13, 1991, ERIC staff tackled this thorny issue at the annual Directors' Meeting. The agenda captured the mood:[14]

The Great Debate: How Shall We Define "Education Related?"

Ted Brandhorst and Craig Howley will lead panels in a debate of contrasting views of what should be included in the database…. Related questions about the scope and coverage of ERIC may be raised as well.

Open participation from all Directors will be encouraged and accommodated.

The end result of the debate was to keep selectors as they were. Still, Howley and others have continued to keep alive the idea that the concept "education-related" ought rightly to be broadened. In a 1997 interview, Howley reflected on why he still believes this is a needed course to pursue:

> [One] negative trend [in ERIC has been] the failure of the Department of Education to appreciate ERIC's importance as the major intellectual resource for teachers and scholars. As a consequence of that failure, there is the consequent failure of the ERIC database to be sufficiently inclusive in answering the question of what is related to education and what is not related to education.
>
> If you compare ERIC, for example, to AGRICOLA, the Department of Agriculture's database, you'll find that AGRICOLA does not require that the word "agriculture" be used. It reaches far beyond agriculture. And there's no reason except failure to appreciate the intellectual significance of our literature that the ERIC database is a lot [less] inclusive.[15]

The "New" ERIC User

Though this dispute over what constitutes "education-related" material may have resulted in ERIC staying true to its original mission, both sides in their arguments had acknowledged the

74

changing landscape of the ERIC user. While the system was first and foremost a database, it had on its own evolved into much more than "just a database."[16] By the 1980s it had become a national information system. Larry Rudner expanded on this distinction in recent testimony:

> I argue that for 30 years ERIC has been a depository, an archive. I also argue that ERIC would have died long ago, if it was just a depository. The ERIC Directors have taken the title of the project and the title of their roles seriously. ERIC is an Information Center; their role is as Clearinghouse Directors.[17]

Phyllis Steckler of Oryx Press agrees with Rudner's viewpoint: "I think people are unwilling to say that [ERIC] is an archive and should be an archive. They want something more out of the system."[18] This "something more," according to Rudner, is the specialized information center. Rudner refers back to this classic definition:

> A specialized information center makes it its business to know everything that is being published in a given field. It collates and reviews the data, and provides its subscribers with regularly issued compilations of critical reviews, specialized bibliographies, and other such tools. Its input is the output of the central depository.[19]

This expanded definition of ERIC describes a system that is no longer just the domain of the researcher. As more and more practitioners had become ERIC users, their accompanying need for customer services was acknowledged. In fact, Chuck Hoover's legacy to ERIC, according to Kevin Arundel,[20] was his plea that the system concentrate on two things: awareness and access.[21] It was with these very words that the Trester book closed:

> "Awareness" and "Access" are the key words for ERIC's future—how to make all potential users aware of the materials

> in ERIC and how to provide the proper access for all those individuals who learn of the ERIC system and want to use it.[22]

The evolution in user awareness and access is perhaps the most distinctive feature of the ERIC system in the post-1980 years. In fact, of the 52 interviews given in support of this book, every interviewee cited (to some degree) the rise of the practitioner audience as one of the chief trends of ERIC in modern days. Here is a sampling of what was offered:

> The scope of ERIC? There have been some major changes there. The emphasis changed from the arena of just the researcher to now parents, students, administrators, Congressmen, as well as researchers and librarians. You name it. *–Bob Thomas, Program Monitor*[23]

> There is a major change in the audience the system deliberately caters to. I think they may downplay it, but when I was a doctoral student—or even the first two decades of ERIC—it was very much oriented toward people who were looking for research.... I didn't sense the system really sought the practitioner audience. But right now, I think we're getting our most enthusiastic response from teachers and people at the school level. *–David Haury, Director, Clearinghouse for Science, Mathematics, and Environmental Education (SE)*[24]

> They used to complain years ago that so many ERIC users were students. But, being a student is not a disease. It's a temporary thing and eventually they will be practitioners. *–Lilian Katz, Director, Clearinghouse on Elementary and Early Education (PS)* [25]

> I think a major trend has been moving from a more reactive to a more proactive service. We've been doing more outreach, more deciding what the scopes are in our area, developing documents ahead of time, rather than just documenting what had already been occurring in our scope. *–Jeanne Bleuer, Associate Director, Clearinghouse on Counseling and Student Services (CG)* [26]

Although a shift in the user audience already was occurring in the early 1980s, many observers were slow to recognize it. Writing in the mid-1980s, Tommy Tomlinson of OERI (and a member of the ERIC Redesign Panel) expressed his perceptions about the ERIC user:

> ERIC, it is claimed, is operated by academics for academics, and consequently of little value to practitioners and others who have no taste for or sophistication about interpreting empirical evidence, abstract conceptions, and other theoretical generalities. The sort of work that academics and researchers do is naturally related to the material contained in the ERIC system, hence of direct utility to them; sort of the raw material of academic life. On the other hand, this same material speaks very little to the lives of teachers and others whose raw material of work is their experience, which they might like to compare to others like them, but which is neither mirrored in nor informed by the contents of the research literature.
>
> This situation seems plausible, and it seems consequently obvious that practitioners would find the system of little value in its current form.[27]

Yet, documented data show that practitioners were in fact already a viable part of the user audience by the mid-1980s. As early as 1981, the NIE-commissioned Cost and Usage Study[28] noted that materials of appeal to practitioners were already in the database:

> Before the decade [the 1960s] was over, ERIC's potential to serve many segments of the education community was recognized, and the program was expanded to include information of primary use to teachers and administrators in addition to information of primary interest to the R & D community and to Federal officials.[29]

According to the Cost and Usage Study, teachers and administrators in the early 1980s represented more than 29 percent of all users. This made school practitioners the second largest group of ERIC users in the entire system. Moreover, statistics collected at access points that regularly served practitioners, the San Mateo Educational Resources Center (SMERC) for example, reported much higher usage rates by practitioners. Indeed, SMERC had an 85 percent practitioner usage rate. In addition, the King Study reported that 29 percent of ERIC providers had 10 or more requests per month from parents.[30]

In order to determine if practitioner-oriented materials in the database could be more readily used, NIE had awarded SMERC a contract in 1979 to develop and test a National Practice File. In a 1986 commissioned paper, Guthrie and Stoddart of the University of California at Berkeley provided an overview of the Practice File project:

> This project was intended to assess how an ERIC-like program might provide practitioners with information about educational programs and practices as contrasted with research results. The new file was intended to provide practitioners with information on exemplary practices, model programs, and promising ways of doing things in classrooms and schools.... The file was pilot tested for six months in 14 organizations.
>
> Despite the fact that the [six-month] test period included three summer vacation months, the file was used extensively by practitioners. Sixty percent of all practice file users were elementary and secondary school teachers and school-site administrators.... The three most common purposes for seeking information from the Practice File were program development, curriculum development, and classroom instruction.[31]

Given the success of the project, SMERC recommended that the file be expanded. In 1982, they received another contract to determine the feasibility of creating a separate ERIC file, just for practitioners. Identified documents and journal articles were of 500 words or less, so that the full text of these materials could be offered the user.[32] Book reviews and software were key components of this file. Staff at the Languages and Linguistics (FL) Clearinghouse offer this summary of the project:

> Two major goals of this project were: (1) to increase the number of practitioner-oriented documents in ERIC by encouraging clearinghouses to seek out these materials and to establish a regular network of sources of practice materials; and (2) to identify those documents in ERIC of particular interest to practitioners and to make it possible to do a computer search exclusively for these materials.[33]

The end result of this successful project was not to create a separate database for practitioners, but to designate them as a distinct group of ERIC users. Thus in 1984, the Target Audience field was created, enabling practitioner users to search the database for those materials that were earmarked especially for them. As the minutes of the Technical Steering Committee for May 31, 1984, reported:

> In the final analysis the PF [Practice File] will remain a part of ERIC, complete with ED numbers, and our responsibility, at this point, is to find a way to cycle PF activity smoothly into the standard clearinghouse acquisitions functions.[34]

As a result of the Practice File, every document added to the ERIC database from January 1984 on is designated with a Target Audience field. In addition, RIE documents from May 1975 to October 1983 were reviewed and designated as "practitioner" oriented when appropriate.

Given the system's broadening appeal to the practitioner audience—plus OERI's contention during the redesign years of 1985-1987 (see Chapter 2) that this audience had been sorely neglected—ERIC began a conscious effort to embrace the practitioner audience in the post-redesign years. Bob Stonehill, former director of the ERIC system, puts these events in perspective:

> Over time [ERIC had become] a government program where one of its main requirements was checking off how many documents were processed. The program was already kind of tired when in the mid-80s Checker Finn started to really rock the boat and criticize ERIC on a whole number of fronts: "There are too many clearinghouses," "The database is just for graduate students," "Teachers never use it," "The documents in it stink." There were a litany of criticisms that have enjoyed relatively stable half lives.
>
> We essentially took some time to understand what those criticisms were and began to respond to them. We began looking at who was using ERIC. One can never know who uses the database but who at least asks questions of the clearinghouses. Who's calling up? How do you reach teachers? How do you really influence with information the education providers—teachers, principals, school board members, and so on?
>
> So ERIC really took on a role of serving the information needs of the schools and the school districts and of the state agencies. Even more than that, trying to get information to people outside of the traditional monopoly of the online information providers began to take root in the mid-1980s.[35]

Serving the Needs of a Diverse Audience

As a direct result of the oversight hearings held to explore ERIC's redesign on July 30, 1987, OERI responded with a three-pronged policy declaration (again, see Chapter 2): [36]

1) ERIC products and services should become more widely used and available.
2) ERIC should become better integrated into OERI's mission of gathering, analyzing, and reporting information on the status and condition of education.

3) ERIC should serve a wider, more diverse audience, including policymakers, journalists, practitioners, and the general public.

OERI set forth three organizational strategies for accomplishing this aim: ACCESS ERIC, Adjunct Clearinghouses, and ERIC Partners.

ACCESS ERIC

Perhaps more than anything else, the creation of ACCESS ERIC demonstrates the system's commitment to broadening the user audience and providing customer service. The creation of ACCESS ERIC in 1989 was truly a hallmark event.

As noted in Chapter 2, the concept of ACCESS ERIC began with the Council of ERIC Directors (COED). Don Erickson and Garry Walz, among others, were longtime champions of the idea. Their support for the concept only grew stronger as a result of a study of ERIC users commissioned by COED in the summer of 1986. Robert Howe, the director of the Science, Mathematics, and Environmental Education (SE) Clearinghouse, surveyed two groups of ERIC users: (1) a stratified sample of 500 Standing Order Customers (SOCs) who subscribed to the ERIC microfiche collection and were the system's heaviest users, and (2) 200 administrators and teachers from a list of 2,800 schools nationwide, plus 50 administrators and teachers in Ohio. The survey reached the following conclusions:

> Both groups surveyed clearly desire some modifications in clearinghouse services. The three most frequent requests are (1) for identified people at each clearinghouse to give assistance, (2) to establish one or more 800 telephone numbers for calls, and (3) to increase outreach through workshops, publicity, and personal contact. These requests have program and budget implications and several people responding made priority comments. A typical comment was "Give first priority to maintaining and improving the database, but assistance and

> outreach will increase the use, improve the quality of what is obtained, and improve the use of the information."
>
> The recommendation received from about 20 percent of the SOCs and some schools was to establish a central contact point for general questions, problems, and orders regarding ERIC. There is a continuing and growing need for a number/office people can contact in addition to separate clearinghouses and vendors.[37]

The establishment of a unit known as ACCESS ERIC was, in fact, part of COED's four-point plan for ERIC's redesign submitted for consideration to OERI in the fall of 1986:

> People seeking information about education will be better served than they are at present by the creation of ACCESS ERIC. These publics include policymakers, practitioners, media and the general public, as well as the traditional education research community.
>
> The conceptual basis for an "ACCESS ERIC" entity has been endorsed over the years both by user surveys and by the Council of ERIC Directors. It also addresses needs identified by the ERIC Redesign Study Panel.[38]

As COED envisioned ACCESS ERIC, it would "be established by and connected to OERI by means of a basic contract. However, the major source of funding for ACCESS ERIC would come from revenue generated by the system itself as either a nonprofit corporation or a contracted component. ACCESS ERIC would be responsive to a national ERIC advisory board as well as to the funding agency."[39]

When it became clear over the next year and a half that funding for this idea would ultimately come out of the clearinghouse contracts, the directors' enthusiasm waned. Bob Stonehill gives his recollection of the events:

> Garry Walz, way back when, had worked with a group of directors in coming up with [the ACCESS ERIC] concept. However, I think the directors essentially got "cold feet" about it because they saw it as resources out of their own clearinghouse budgets. They were really looking at a zero sum game. So they did not strongly advocate the creation of ACCESS ERIC. The Department [of Education] took on the idea. Jim Bencivenga and others seemed to think that it was a positive way to go.[40]

Lilian Katz confirms that the directors worried that ACCESS ERIC would impact negatively on clearinghouse operations:

> I've never been able to make up my mind whether [ACCESS ERIC] was a good idea. When it started, it took funds away and we were really hurting. We don't feel quite that bad today. But then, that was really a sore point."[41]

The actual start-up of ACCESS ERIC began when OERI commissioned John Collins; Head Librarian at Harvard's Gutman Library (and a member of the Redesign Panel) to write a concept paper on ACCESS ERIC. In his paper, Collins laid out four functions that ACCESS ERIC ought to address:[42]

> After a lengthy and detailed examination of the ERIC system, it has been determined that a new component be added to the existing structure of ERIC. This new component will be called ACCESS ERIC and it will coordinate systemwide products and services. ACCESS ERIC will be composed of four broad and overlapping categories and functions:
>
> 1) Outreach and Awareness
> 2) Assessment
> 3) Training
> 4) Client Services

The particulars for ACCESS ERIC were hashed out by ERIC staff and OERI administrators while the ERIC budget continued to be debated.[43] In 1988, plans for ACCESS ERIC were publicly announced and a Request for Proposals (RFP) was issued, based largely on the recommendations suggested in the Collins paper. In May of 1989, the contract for ACCESS ERIC was awarded to Aspen Systems, Inc., where it has remained.

ACCESS ERIC was formally introduced in the 1989 Annual Report by Christopher Cross, Assistant Secretary for OERI:

> The establishment of ACCESS ERIC was certainly one of 1989's highlights. The first new ERIC system component in over 20 years, ACCESS ERIC will provide a central gateway into the ERIC system, easily available to anyone searching for current education information. Among its first tasks, ACCESS ERIC has developed extensive reference and referral files of organizations that collect and distribute education-related materials, and has compiled a worldwide catalog of institutions that can provide ERIC searches or documents to clients.[44]

Less than a year after its establishment, ACCESS ERIC submitted an assessment report documenting its progress toward achieving this mandate:[45]

> The ERIC redesign study outlined ACCESS ERIC's goals which include system promotion, development and management of systemwide products and activities, public relations, and the production of information analysis products.
>
> In Year 1 ACCESS ERIC responded to the needs for which it was created, including national access to the ERIC system through a toll-free 800 number, contact with more divergent and diversified audiences traditionally not associated with ERIC, and the development of a mailing list to help disseminate ERIC system products. Based on the results of this Year 1 Assessment Report, we will concentrate on expanding our networking and outreach efforts during Years 2 and 3. We will be better equipped to enhance and facilitate the ERIC System in responding to the information needs of the education community.

On the occasion of its first anniversary, ACCESS ERIC noted with pride the success of its user services program:

> In June 1989, ACCESS ERIC received its first telephone call from an Australian user who was referred by Central ERIC. The user inquired about the relationship between Computer Microfilm Corporation and ACCESS ERIC. On July 15, 1989, the 800 line was installed. Since then, more than 800 user requests have been received through the medium.[46]

Although ACCESS ERIC enthusiastically reached out to its target audience, in its early days there was some initial resentment toward it from clearinghouse staff, both because ACCESS ERIC was using funds that would otherwise have been allocated to the clearinghouses and the fact that a group of ERIC Clearinghouse "insiders" who had bid on the contract were not awarded it.[47] There were also the usual problems inherent in starting up a new organization.

With the passage of time, though, there has been recognized approval of the staff of ACCESS ERIC and the services it provides. Judy Beck, formerly of the Teaching and Teacher Education Clearinghouse (SP), offers her thoughts:

> I do think one of the [program] decisions that ended up being on target was the creation of ACCESS ERIC.... Those folks do some really valuable work for the system and I think they're helping to lead the system, too, because they are setting some good standards for products and services and cooperation.[48]

Jeanne Rennie shares Beck's high estimation of ACCESS ERIC:

> The initial impetus for ACCESS ERIC had come from a group of directors talking together and then reporting back to all the other directors. It then became incorporated into the next RFP, not looking necessarily the way we had intended it. But I think in the long run, most people will say that [ACCESS ERIC] has been a positive thing. There was a lot of resistance early on and there were some problems. But now there's been a change of heart. I've learned everything I know about user services from

> Lynn Smarte. She's a whiz and she knows what the clearinghouses' concerns are.[49]

ACCESS ERIC is today appreciated by the public and its system cohorts for what Bob Thomas of the ERIC Program Office refers to as "a one-stop point where the public can open up [ERIC's] treasures."[50] It utilizes the expertise and resources of the entire ERIC community. These collaborations have led to mutual benefits, as noted above. Lynn Smarte, the director of ACCESS ERIC, provides her perspective on the collaboration to which Rennie referred:

> My happiest moments are when the collaboration with clearinghouses results in something unique, that clearly meets a need. We worked closely with the ERIC Clearinghouse on Languages and Linguistics to produce *Why, How, and When Should My Child Learn a Second Language?* This parent brochure is on its third printing because of the high demand from parents, schools, and foreign language teachers who are dealing with this issue and need some research-based answers to questions.[51]

Pete Dagutis of EDRS likewise takes pride in the collaborative efforts EDRS has undertaken in conjunction with ACCESS ERIC. The two components frequently exhibit and train together at conferences. In addition, EDRS is a funder of selected ACCESS ERIC activities and publications, such as the ERIC Annual Reports published since 1996. Dagutis expounds on this collaborative teaming arrangement:

> I think that we have a very good working relationship with the clearinghouses and the other support components. With ACCESS ERIC, we have helped the system market and project itself as one even though there are many different components. I think this involvement has changed other people's opinion within the ERIC system of EDRS. EDRS is not now looked upon as only a micrographics contractor, but as a full team member willing to assist any component for the good of the system.[52]

We close this part of the ACCESS ERIC story with the words of an admiring user:

> I use [ACCESS] ERIC to help teachers learn to use technology in ways that allow them to be powerful. I travel the USA, and work in the places where technology may be there, but it has never been taught to the teachers. There would be no way that I would be able to do this without the ERIC system. I like the organization of information and the power it gives to the least technologically literate teacher. –Bonnie Bracey[53]

Adjunct Clearinghouses

In the post-redesign days, adjunct clearinghouses were introduced as a way of expanding ERIC's coverage of the education literature—and its concomitant appeal to a broader audience—without costing the system additional funds. The idea for adjunct clearinghouses was germinated in the policy paper, "ERIC in Its Third Decade."[54] Appended to that paper was a concept paper entitled "The Adjunct Clearinghouse," authored by Elizabeth Payer of OERI's Information Services division. In her paper, Payer outlined the proposed operating plan for adjunct clearinghouses. She summarized the concept as follows:

> The ERIC redesign initiative has stimulated much new, even creative, thinking about the ERIC system. Redesign panel members, OERI staff, ERIC users, and the public have been involved in a continuing dialogue about what aspects of ERIC ought to be improved and how these improvements ought to be approached. Through this dialogue, which also included discussions about different types of collaborative ventures, the concept of the adjunct clearinghouse emerged. The intent of this concept is plain—to supplement core areas of education information covered by the traditional ERIC clearinghouses. Embracing the concept means looking to the private sector—to business and industry, education and cultural organizations, and foundations—as well as other areas of government for commitment to the idea and additional resources. Implementing the concept means opening up the ERIC system

> to a new world of partnerships that will enhance its visibility, expand its coverage, enrich its database, and enlarge its use by the world of education information seekers.[55]

The adjunct clearinghouse concept received mixed reviews from the 133 educational associations, university libraries, schools, and other parties who responded to Bencivenga's ERIC Redesign Report. The following responses are examples of those received together with OERI's reaction to the comments:[56]

> **Comments.** At least 17 respondents felt that this concept had merit, while 11 respondents and 4 clearinghouses opposed the concept. Respondents opposed to Adjunct Clearinghouses wrote:
>
> "These clearinghouses would be unnecessary, confusing, and redundant if other ERIC components were doing their jobs."
>
> "Existing clearinghouses would be glad to broaden their scopes to cover new areas if funding was available, but we're concerned that if an adjunct clearinghouse ended, they would have to assume its scope with no additional funds."
>
> "Adjunct clearinghouses are likely to represent the views of particular interest groups and may end up overrepresenting certain perspectives and biases in the database."
>
> **Response**. OERI will add up to three adjunct clearinghouses to complement the ERIC system. The federal investment in adjunct clearinghouses will be minimal, compared to the potential benefits an adjunct clearinghouse could provide to ERIC users. OERI will be diligent, in its procurement process, to ensure that adjunct clearinghouses will provide comprehensive, balanced coverage of any given area.

OERI's decision to establish—but not fund—the adjunct clearinghouses made the idea more palatable to everyone. There would be no competition from the adjuncts for the project's scarce funds.

In 1989, four (not the three quoted above) adjunct clearinghouses were inaugurated: Literacy Education for Limited English-proficient Adults (an adjunct of the Clearinghouse on Languages and Linguistics (FL)); Art Education (an adjunct of the Clearinghouse for Social Studies/Social Science Education (SO)); U.S.-Japan Studies (an adjunct of the Clearinghouse for Social Studies/Social Science Education (SO)); and Compensatory Education (Chapter 1) (an adjunct of the Clearinghouse on Urban Education (UD)).

Two of these original adjunct clearinghouses are no longer in existence (Art and Compensatory Education). The current inventory of adjunct clearinghouses is twelve. (See Appendix D for a complete listing.)

Much like the concept of ACCESS ERIC, the adjunct clearinghouse concept has grown more popular over time. John Patrick, director of the Social Studies/Social Science Education (SO) Clearinghouse, points to the adjunct clearinghouses as one of his clearinghouse's major accomplishments:

> We have found it very agreeable to seize the adjunct clearinghouse idea.... I remember Bob [Stonehill] being instrumental in helping us put together our first adjunct clearinghouse. ERIC Art is something we've run with very nicely, having obtained it and nurtured it. Bob was at the forefront in making original contacts to make that happen. We've found [adjunct clearinghouses] to our liking.... We now have four with a fifth one ready to start this week. So I look upon that as one of our major achievements.[57]

ERIC Partners

The third ERIC strategy proposed as a result of the Redesign Study was that of ERIC Partners—designated organizations or institutions that would help with the various information acquisition and dissemination functions and, in return, would receive benefits from the ERIC system for their support.

In floating this concept to 2,000 interested parties, OERI received clear public support for the idea. Specifically, these comments and the government's response were officially noted:[58]

> **Comments**. 13 respondents specifically supported this concept and two others thought it should be given more thought. One opposed it because it would confuse the users and spread already inadequate resources too thin. Another pointed out that it had been used by the ERIC clearinghouses in the 1970s, but while successful it was abandoned because of high maintenance costs. Two comments expressed concern that excessive paperwork requirements would be needed for honorary recognition of Partners.
>
> **Response**. ERIC Partners will become a new component of the ERIC system, providing and disseminating ERIC materials to their clients. ERIC Partners will not receive any direct Federal funding, although they may receive training on effectively using the ERIC system.

At a joint ERIC directors and technical staff meeting held on March 22, 1988, Lynn Barnett of the Clearinghouse on Higher Education (HE) facilitated a discussion of the partnership concept.[59] As a follow-up to that session, Judi Conrad, who was at that time with the Clearinghouse on Handicapped and Gifted Children (EC), presented the model that her clearinghouse had developed for interacting with ERIC Partners:

> The following principles were outlined: (1) determine what your own organization does best; (2) find Partners that complement and supplement your activities; (3) find Partners that reciprocally enhance your operations; (4) develop and maintain effective communication mechanisms; (5) establish a plan of action, with time lines and responsibilities; (6) follow up on your plan of action; (7) evaluate each Partnership

> activity; (8) follow up on the evaluation; (9) build on the results of past experience; and (10) communicate goals and objectives beyond the immediate constituencies.
>
> The EC model includes a task force plan that actively involves the clearinghouse's national advisory board. Common elements include: identifying needs-sensing mechanisms; analyzing needs data for determining new products; identifying extended constituencies for dissemination and multiplier effects; collecting and analyzing existing materials to find best products that can be used by all parties.[60]

In 1989, the concept of ERIC Partners came to fruition. In November 1990, ACCESS ERIC published a policy and procedures manual for ERIC Partners. This manual set forth the underlying policy that led to the creation of the ERIC Partners program and provided guidance on recruitment, policy statements, and Partnership agreements. The handbook was a "compilation of the individual policies and procedures currently used by ERIC Components when dealing with their Partner organizations."[61]

The ERIC system quickly embraced the Partners concept, as the following excerpt from a letter sent by Garry Walz of the Clearinghouse on Counseling and Personnel Services (CG) to a prospective Partner illustrates:

> In our twenty-three years of serving counselor educators and counselors, I have never been as excited about any of our initiatives as I am about the new and compelling ERIC Partnership Program. Supported by the Office of Educational Research and Improvement of the U.S. Department of Education, the Partnership Program is designed to improve the dissemination and utilization of educational information. Each ERIC Clearinghouse has been authorized to develop its own strategy for improving the dissemination of information (both ERIC documents and journal articles) and the use of that information for the improvement of practices in their area of professional coverage. As the clearinghouse responsible for serving counselors and human service specialists at all levels

> and in all settings, we have set as our goal the design of a partnership program that will best serve counselors throughout the United States.[62]

Even today, Walz looks back with enthusiasm at the inauguration of the Partnership idea:

> We singled out and prioritized the idea of developing partnerships. Working together, Jeanne [Bleuer] and I came up with the idea of not having institutional partners, but departmental partnerships. We had something like half of all the counseling and service training schools in the country as partners. People got suspicious at first because other [clearinghouses] had 5 or 10 and we had 150. But they were all legitimate. This went very well for a while. The program ran on adrenaline and excitement.[63]

Thanks in part to the innovative selection process used by CG, more than 350 Partnerships were established during the inaugural year of the program. The newly formed ACCESS ERIC compiled an ERIC Partners Directory for systemwide use by the year's end.[64]

In 1990, the ERIC Program Office asked the clearinghouses to report the activities they performed in conjunction with their Partners. Norma Howard of PS compiled the data. The top five types of activities reported were as follows:[65]

1) Acquisition of documents from Partners
2) Clearinghouse staff participation in Partners' conferences, workshops, and meetings
3) Arrangements for clearinghouses to contribute to journal columns or newsletter announcements, or to otherwise jointly participate with Partners in production of publications

4) Question referral
5) Distribution of clearinghouse products by Partners

Eight years after the program had been established, the number of ERIC Partners had nearly doubled—to 650. Major Partners currently include the sponsors of the thirteen adjunct and one affiliated clearinghouse.[66] Others, who promote ERIC's products and distribute ERIC materials in return for VIP treatment, include associations, government agencies, and federally funded projects. Illustrative of ERIC's many hundreds of Partners are the American Association of School Administrators, Edison Electric Institute, the International Reading Association, and Oxford University Press.

The International User

A final audience member included in this chapter on ERIC's expanding user base is the international searcher. In its early years, ERIC was the domain not just of the researcher, but of the American researcher. Gradually, though, ERIC was sought out by researchers in other countries, particularly members of the British Commonwealth that shared English as their first language. By 1989, ERIC was "the fourth most popular optical media product in European libraries."[67]

ERIC staff began to view themselves as members of a global community. In 1982, Chuck Hoover and Ted Brandhorst made a major presentation on the development and status of ERIC at a conference in Florence, Italy.[68]

In 1986, an informal group known as InterEd was formed to explore international cooperation. Brandhorst, who was instrumental in establishing this group, reported on the group's progress and activities at the 1991 ERIC Directors'/Technical Meeting:

> As many of you know by now, "InterEd" is the name given to an informal group consisting of the Australian Education Index (AEI), British Education Index (BEI), Canadian Education Index (CEI), and ERIC. This group met for the first time in 1986, outlined some possible ways of cooperating, and have kept in regular touch since then. However, the major "cooperation" that has been accomplished has been the regular sharing of thesaurus updates and subject index terminology. In general, the situation has been that we would all like to be doing more together, but none of us has had the resources to move in this direction.
>
> In the late 1980's, the group received an infusion of energy from some outside sources.... I suggested to Bob Stonehill that the time seemed ripe to make something happen in the international cooperation area. Bob was very receptive. In his characteristic way, he wanted to move directly toward an "ERIC international" database. While he was willing to support a "global thesaurus" venture, and realizes that it may be a prerequisite or precursor to more advanced cooperation and coordination, he does not think that by itself it is exciting enough to catch the interest of higher ups who might be able to influence funding. We discussed the possibility of an international conference call in order to get all the InterEd principals directly in touch in order to plan the next steps.[69]

The proposed integration of the ERIC database with the other international educational databases produced by the English-speaking countries of Britain, Canada, Australia, and New Zealand gained popular support. At the Annual Meeting of the American Society for Information Science held in Washington, D.C., in October 1991, the concept received enthusiastic backing from other database producers. In October 1993, Dialog Information Services did in fact combine these databases into the first international education-related CD-ROM product, "International ERIC." International ERIC combined the resources of AEI, BEI, and CEI. The CD-ROM was marketed in both the United States and Europe by DataStar, a subsidiary of Dialog.[70] It marked the first product to be produced by the InterEd consortium.

The 1990s witnessed continued growth in the international arena. Much of the activity centered on presentations at international conferences, translations of ERIC publications into foreign languages, and training of foreign dignitaries and other visitors. The following events were typical:[71]

- The International Association of Universities (IAU) in Paris launched an International Bibliography of Higher Education during 1992, based on contributions from the ministries of education from UNESCO member countries. The ERIC Clearinghouse on Higher Education (HE) was designated the official contributor for the United States.
- In 1993, ERIC system components hosted visitors from Australia, Botswana, Canada, Chile, China, Columbia, France, India, Japan, Korea, Mexico, Russia, South Africa, Taiwan, Turkey, and Ukraine.
- In 1994, the Secondary Principals Association of New Zealand (SPANZ) printed and distributed copies of all of the digests produced by the ERIC Clearinghouse on Educational Management (EA) to its 300 members in public, private, and integrated schools.

By 1996, the *ERIC Annual Report* noted that, "ERIC is accessible virtually anywhere in the world. More than 1,000 institutions in 27 countries provide access to the ERIC database, ERIC documents on microfiche, and other ERIC resources."[72] In 1997, ERIC had 133 international Standing Order Customers (SOCs) at institutions as nearby as the University of Ottawa, and as far flung as the Chinese University of Hong Kong, the University of Amsterdam, and the Korean Educational Development Institute. In an effort to provide user services to the international client, ERIC staff have been actively attending relevant international conferences and forming partnership arrangements with international organizations. Moreover, selected ERIC publications have been translated into Spanish and Chinese, among other languages.[73]

With the advent of the Internet (see Chapter 5), international users have become commonplace. In its 1998 Annual Report, EDRS reported that 48 percent of the 103,000 visitors to its Web site in 1997 were from foreign countries. The top five foreign countries represented among EDRS users were Canada (24 percent), Australia (21 percent), Japan (11 percent), South Korea (9 percent), and the United Kingdom (8 percent).[74]

International collaboration is a concept that has always been innately appealing. As ERIC as a system reached out to a more diverse audience, clearinghouse staff saw this as part of their mission, according to John Patrick for the Clearinghouse for Social Studies/Social Science Education (SO)—a longtime leader in this initiative:

> This is very personal with me but I think it ramifies throughout our clearinghouse. Our scope of operation has always been international. For example, one of our adjunct clearinghouses has to do with U.S.-Japan relations. A broad view of international relations has become part of our philosophy.[75]

The Clearinghouse on Elementary and Early Childhood Education (PS) likewise considers its international focus to be an integral part of clearinghouse operations, according to associate director Dianne Rothenberg:

> In 1980, we hosted a conference in honor of the International Year of the Child, which was also significant in helping us maintain a very international view of our work and the services that we provide around the world. A lot of that is driven by the fact that Lilian [Katz] is so influential in other countries as well as this one and is so respected for it.

> We've maintained contacts with a lot of people who presented at that conference, even today. Now we have e-mail with them. The international focus has been a key factor here.[76]

This anecdote from Mike Eisenberg of the Clearinghouse on Information & Technology (IR) underscores the growing importance of the international ERIC user:

> As Don Ely used to say, you can go to Afghanistan—well, I'm not sure Afghanistan—but you can go to some country somewhere, and you say, "My guy's a known professor at Syracuse University," and they'll go, "Oh, that's nice." And then you say, "Yeah, and I also direct an ERIC clearinghouse." And they'll say, "ERIC! ERIC is the greatest!" And then they'll have a story about how ERIC has made a difference in their lives. They will show you the microfiche. It's like pure gold to them.... That information resource is the most important educational information resource in their entire country. That's a pretty impressive thing to be part of. It has been a privilege to be a part of it.[77]

In fact, the last 19 years have witnessed a dramatic rise in user services for *all* audiences. ERIC users query staff through walk-in visits to clearinghouses, letters, telephone calls, and, increasingly, e-mail. Clearinghouse staff view all correspondence as integral to their mission. They answer every request—even those addressed to "Dear Eric" or "Mr. Clearinghouse." The more feminist-minded users who have written to "Ms. Erica Clearinghouse" have likewise received prompt attention.[78]

As a group, ERIC practitioners are well satisfied. Customer surveys, which are now (since January 1999) contractual obligations for the clearinghouses, have underscored that ERIC is both well-used and highly regarded. This sampling of testimonials provides further evidence of ERIC's favorable standing with consumers:[79]

> "I would like to commend ERIC for helping me as a parent. When I entered the chaos of special education for my

> gifted/emotionally disturbed son, I really needed quality information to help the system work for him. ERIC supplied me with the right information quickly. He is doing better with lots of great community support, but I could not advocate as effectively without the knowledge I have gained and passed on."

* * *

> "I discovered the valuable worth of ERIC materials when I served on the school board. The balanced presentation of research on a wide variety of topics served me well as I attempted to "do my homework" on the multitude of issues that confront a school board as we end the 20th century."

* * *

> "I am a parent advocate for higher educational standards. To be effective in that role, one must be very well informed—well enough to converse on equal terms with school staff. For that, ERIC is indispensable."

Materials Aimed at a Practitioner Audience

Hand-in-hand with reaching a practitioner-oriented audience is the need to provide products that meet consumer needs. As ERIC began its post-1980 years, the system offered a number of publications, some targeted specifically at practitioners, but most at the traditional research audience. In addition to flyers and brochures aimed at introducing the public to ERIC and the clearinghouse services, there were "minibibs," publication lists, search reprints, information bulletins, hot topics and/or occasional papers, and the ERIC Information Analysis Products (IAPs). In reviewing these materials in 1985, NIE staffers noted that the IAPs, which were "highly substantive analyses based upon current research in the field,"[80] and the minibibs, were used primarily by researchers. Hot topics and occasional papers were more consumer-oriented in that they were more limited in scope than the ERIC IAPs.

It was not until the advent of the ERIC Digests in 1981, however, that a truly practitioner-oriented publication was issued by the system. As Susan Imel of CE notes, "the Digest program… revolutionized user services. It was our entrée into doing more of these synthesis kinds of products for users and moving away from what—for our clearinghouse—had been a very large information analysis program."[81]

Digests were short and concise and they synthesized the literature for the reader. They gave busy administrators and lay people an overview of a hot topic. As described in the ERIC Ready References, Digests are:

- Short reports (1,000–1,500 words on one or two pages) on topics of prime and/or current interest in education
- Targeted specifically for teachers, administrators, policymakers and other practitioners, but generally useful to the broad educational community
- Designed to provide an overview of information on a given topic, plus references to items providing more detailed information
- Produced by the 16 subject-specialized ERIC clearinghouses, and reviewed by experts and content specialists in the field
- Funded by the Office of Educational Research and Improvement (OERI) of the U.S. Department of Education (ED)[82]

Kevin Arundel remembers the early days of the Digests as a time when a number of practitioner-oriented materials were being tried out by the clearinghouses:

> Exceptional Children is the [clearinghouse] that started the Digests. That was in the early 80s. There were also other proposals for information analysis products (which I thought was a rather strange name, but at any rate they are what they

> are). We also had the idea of a mid-level document that never got off the ground. But the idea of the Digest did take off.[83]

The Clearinghouse on Disabilities and Gifted Education (EC) was a likely starting point for the Digests, since this is a clearinghouse that has always had a large practitioner and parent clientele, eager for information. Kathleen McLane feels that the creation of the Digest format was a natural extension of their clearinghouse's philosophy:

> The Digest is ERIC's equivalent of the sound bite. Interestingly, we've done a number of focus groups over the years, with various practitioners, classroom teachers, administrators, staff developers, and we have very, very consistent results about how they want to receive information. They want it in brief materials, concisely stated, lots of nice organizers—the kinds of things ERIC does with the Digests....[84]

McLane's observations are consistent with what the King study reported in 1981 about materials produced for practitioners. Likewise, Guthrie and Stoddart concluded that the needs of practitioners are very much the way McLane describes them. In their paper (which was highly critical of the ERIC system), Guthrie and Stoddart had this to say about the needs of the practitioner audience:

> Most practitioners are not systematically prepared to frame research questions, or to pour through large volumes of printed material that may result from a vague or incompletely structured search. Most importantly, they are less concerned with the process of formulating questions, and more concerned with finding an answer to specific instructional and classroom management situations. They do not want, or have the time, to plow through reams of original documents. They want an action plan or guide geared to a specific school situation.
>
> ...They do not want research in its original undigested form. They prefer to receive presorted lists of references, or packets of articles or documents in response to phone or mail requests,

> rather than to spend time seeking and compiling these themselves. They prefer a summary article that presents the best of current thinking on a topic.[85]

The "digested" research that Guthrie and Stoddart were suggesting ERIC provide to practitioner users sounds very much indeed like the ERIC Digests[86]—documents that are easy-to-use and present research in a condensed form. Over time, these user-friendly syntheses have grown in popularity. Many ERIC staff cite the ERIC Digests as a major achievement of the ERIC system. In an interview, Larry Rudner asked and answered the following question: "What is one of the best things the government has done recently? The Digest series. This is a good example of federal oversight with a vision."[87]

Blane Dessy has this to say about the Digests:

> One of the things that I really like about ERIC is that it also creates knowledge. It doesn't just acquire it. If you look at the Digests, those are really knowledge creation. They're not just cataloging and abstracting. Really bright people are creating new information. I think that is a tremendous achievement.[88]

Today, the ERIC system publishes approximately 160 Digests a year (an average of ten per clearinghouse). As of December 1999, approximately 2,600 had been published. Digest topics reflect the questions most frequently asked of the clearinghouses. Digests typically use a question-and-answer format to present the information. And although they are brief, they always include additional resources for readers interested in acquiring more indepth knowledge of the subject.

A second type of publication developed by the clearinghouses to address practitioner needs was the Conclusion Brochure. As their name suggests, these brochures synthesized conclusions of current educational research aimed at parents and educators. Among the first brochures developed were:

- How do I help my child say "no" to drugs?
- How can I be involved in my child's education?

- Is repeating a grade a sign of failure?
- How can I improve my child's reading?

Conclusion Brochures were started by the Clearinghouse on Information Resources (IR) at Syracuse University. Syracuse's contract for this special project was awarded in October 1986 and ended in December 1987. Staff summarized the project in this abstract:

> A one-year pilot project created a series of 12 "Conclusion Brochures." The brochures summarized significant research conclusions, and listed four or more references, for topic areas of high interest to parents and educators. Topics generated by the ERIC clearinghouses were prioritized according to results of the 1986 Gallup Poll of Public Attitudes Toward Public Schools. Writers were experts in the field, also nominated by Clearinghouses. The brochures' primary audience was parents; secondary audiences were teachers and school administrators.
>
> Responses to the brochures were highly favorable, indicating a continuing need for educational research summaries that address high interest topics, are easy to read, and are widely available.[89]

Like the Digests, the Conclusion Brochures have proven to be extremely popular. Since ACCESS ERIC's establishment in 1989, they have taken over the free distribution of the Conclusion Brochures, which have since been renamed Parent Brochures. Each year, more than 100,000 paper copies are distributed, and users view copies on the Web more than 50,000 times a year.

Interestingly enough, this popularity had not been predicted. Here's what the Project Monitor, Kevin Arundel, remembers:

> When we first got the [Conclusion] Brochures going, we got laughed at. When some people around here mentioned them, I said, "I think it's a pretty good idea." They said, "It won't go anywhere."
>
> Mike Eisenberg's [the associate director of the IR Clearinghouse at the time] wife was a nurse at a pediatrician's office. His wife came home one day and said something about how she was trying to get hold of these wonderful brochures that came out of Syracuse. "What do you mean? Those are my brochures," Mike told her. So they sent all the pediatricians brochures and that's how the concept got picked up.[90]

The following excerpt from a Syracuse (N.Y.) newspaper article informed its readership about the utility of Conclusion Brochures:

> There are no easy answers to the question of how to be a good parent. But it's clear that parents who want to improve their children's reading abilities or keep them away from drugs don't want to sift through stacks of the latest academic research on how to do it.
>
> What parents want—according to a new idea being tested in nine Onondaga schools—are easy-to-find and easy-to-read answers to their most basic questions. The idea is to boil down all the academic research and present it to parents in short brochures free of academic jargon, said Susan Hubbard of the Educational Resources Information Center at Syracuse University.
>
> The most common response so far has been a demand for more.[91]

Both the Digests and the Conclusion (Parent) Brochures have retained their popularity and are today integral parts of the system's publications program. Other practitioner materials have been developed over the years by ACCESS ERIC as part of its mandate to market the database to a diverse audience. *The ERIC Review*, which made its debut in 1990, is often cited for its quality. This journal, distributed free-of-charge, provides its more than 27,000 subscribers and other targeted audience members with the latest information on critical trends and current issues in education.

Other consumer-oriented publications distributed by ACCESS ERIC since 1994 include the revised "All About ERIC" and "A Pocket Guide to ERIC." "The Annual Report" and the recently developed ERIC Slide Show also acquaint users with ERIC's mission. The Slide Show, which is customized by the clearinghouses to serve their individual clienteles, provides new users with an overview of the ERIC system. Together, these materials have ensured that ERIC is meeting the needs of its non-researcher audience. In 1992 testimony, Mike Eisenberg summarized ERIC's efforts in this regard:

> One often-voiced and erroneous statement is that ERIC is only for researchers and graduate students. This is simply not true. Approximately one half of the 100,000 annual requests for information to ERIC clearinghouses and support components come from teachers and administrators. After the review activities of 1987 and the establishment of new contracts, the ERIC system committed itself to providing services and products to education practitioners and parents.
>
> In addition, ERIC produces a full range of publications specifically targeted to administrators, teachers, and parents. *The ERIC Review*, ERIC Digests, monographs, and Conclusion Brochures reach hundreds of thousands of teachers, administrators, and policymakers.[92]

We close this chapter by restating ERIC's current mission. As one reads these words, it becomes apparent that this mission has indeed evolved over time.

> The mission of the ERIC system is to improve American education by increasing and facilitating the use of educational research and information to improve practice in learning, teaching, educational decision making, and research, wherever and whenever these activities take place.[93]

Chapter 4

Technology Takes Over: Phase I

Technology is the answer. What was the question?

–Kevin Arundel, quoting Don Ely, 6/13/97

The efficiency and vision of ERIC's technology-on-a-shoestring budget has been remarkable.

–Lynn Barnett, former Chair, ERIC Technical Steering Committee, 7/30/87

ERIC approached its midlife as a leader in the technology revolution. As noted in Chapter 2, when ERIC was under scrutiny in the mid-1980s, it was only in the area of technology that the system was adjudged to be above reproach. Reviewers declared it "state-of-the-art."[1] In his Congressional testimony before the Subcommittee on Select Education, Bob Chesley had only words of praise for the system that he formerly directed: "The original creators of the [ERIC] system did a remarkable job in designing a system that has been compatible with and enhanced by the technological advances that have since occurred."[2]

Indeed, from its earliest days, the ERIC system was perceived as a standard-bearer in applying technology to its advantage. From its beginning choice of microfiche to its early alliance with the online vendor Dialog, ERIC was at the forefront of the technology movement. As ERIC entered the 1980s, it was disseminating microfiche using "cutting edge" technology and being offered online through three commercial vendors: Lockheed's Dialog, BRS Information Technologies, and System Development Corporation's (SDC's) ORBIT Search Service.[3]

Even the ever-critical Checker Finn, in his testimony before Congress in 1987, noted ERIC's many technology-related successes:

> ERIC has successfully harnessed some of the latest information technologies as they have become available, from microfiche through computers and now to "Compact Disk-Read Only Memory (CD-ROM)," a system in which an entire encyclopedia can be stored on a disk smaller than a phonograph record. ERIC has contributed to the wider usage of these devices, not only within the government, but also in the private sector and the library community.
>
> Dialog, an online computer service… started in the late 1960s, with ERIC as its first database, in a pioneering effort to disseminate information over telephone lines to computer terminals in offices and homes. And it is the private sector which is now developing and marketing the ERIC database on CD-ROM, an inexpensive retrieval system which can enable ERIC to become available in schools throughout the country.[4]

Technological Advances: 1980–1992

As ERIC entered the 1980s, it maintained its technological advantage, as Former Secretary Finn acknowledges. This was an era characterized by leaps in technological advances. At every turn, ERIC positioned itself to make maximum use of the new technology. Every person interviewed in support of this book was quick to acknowledge the impact of technology as a major force in ERIC's modern history, as these quotes illustrate:

> Clearly, functionally and technically, the trend [in the last 15 years] has been to convert and view ourselves in light of what the new technology allowed us to do. We were very responsive. *–Erwin Flaxman, Director, Clearinghouse on Urban Education*[5]
>
> Under Bob [Stonehill's] leadership there was an attempt—actually there were lots of attempts—to adopt new technologies and really be in the forefront of developing new technologies, particularly their use in education.
> *–Keith Stubbs, Director of ERIC*[6]

> I think the major trend in ERIC in the last 15 years has been to relate to technology—which is right where our clearinghouse is. The major trend has been to try to capitalize on the new technologies, almost to anticipate the new technologies, and certainly at least to keep pace with them. *–Mike Eisenberg, Director, Clearinghouse on Information & Technology*[7]

In this chapter we will focus on the impact of technology on the ERIC system up to the advent of the Internet as a major presence in 1992. Because the Internet has had such a profound impact on ERIC and its utilization, the entire next chapter in this book is devoted to it. This chapter will highlight how technology changed the day-to-day life of ERIC operations, ERIC's expansion to CD-ROM technology, and three special projects undertaken by the ERIC system to utilize the latest technological advances: MICROsearch, ERIC Digests Online (EDO), and the UMI Full-Text Pilot Project.

Technology and Day-to-Day Operations

As anyone involved in business of any kind knows, office practices were revolutionized in the 1980s. Changes to typed documents used to be of the cut-and-paste variety. An author who wanted to request a change to a text thought long and hard about it before asking a secretary to make that change, knowing full well that a few additional words might necessitate retyping many pages. Facsimile machines were rare and expensive. Calculations were done with adding machines and duplicate copies were made with carbons.

Those who have been with ERIC since before the days of personal computers and local area networks recount with awe in the following anecdotes about how much easier and efficient their jobs have become with the advent of technology:

> The major trends in ERIC in the past 15 years? Well, obviously the personal computer revolution and technology. That is your

number one item. It surpasses everything. The old days of computer punched paper tape when we first started processing RIE: that was amazing! And shipping that darned tape was always a problem, too, because it came in shreds and unraveled and was a mess. The Facility finally had to start doing all of the keying for all of the clearinghouse resumes. Then, of course, we went to OCR [optical character recognition] and then finally online. It's just unimaginable, all of the changes that have taken place. *–Jim Houston, Lexicographer, ERIC Processing and Reference Facility*[8]

Obviously the big trend is the greater utilization of technology. Of course, everyone mentions it, it's so true. Even its impact on processing. I remember we had to transmit items at eleven o'clock on Thursday, because that was the only time the computer was open for our clearinghouse. *–Jeanne Bleuer, Associate Director, Clearinghouse on Counseling and Student Services (CG)*[9]

We had access to a computer, but it was a really old, awful computer. We were in another building at that time. Our offices were about a mile away. I had to come over to the library one afternoon a week. Then eventually in 1984 we got microcomputers. *–Judy Wagner, Associate Director, Clearinghouse on Adult, Career, and Vocational Education (CE)*[10]

Technology revolutionized the abstracting process, too. When I came, they were typing abstracts and secretaries were using Optical Shared Reader forms. The corrections were just horrendous. If you made a mistake, you had to go back and cover it with a blob, or a hook, or a loop. *–Sandra Kerka, Associate Director, Clearinghouse on Adult, Career, and Vocational Education (CE)*[11]

In 1981, we got our first Apple II Plus. We were one of the early ones to adopt any microcomputers. So that was a big event for us. I can remember that it sat in our library and we had no clue how to use it. It wasn't busy most of the day. Now we have about 20 IBM clones in a local area network and often there are times when you can't get computer access because

> they are all being used. *–Dianne Rothenberg, Associate Director, Clearinghouse on Elementary and Early Childhood Education (PS)* [12]

As these personal reflections reveal, technology has had a major impact on the workaday life of ERIC staff. Abstracts could be more consistently produced, indexed, and processed with the aid of technology. Acquisitions, publications, and user services were all done more efficiently, too, thanks to the computer. The effect of this streamlining has been twofold: (1) to raise quality control standards, and (2) to free up staff (and the accompanying fiscal resources) for content-related tasks. A quiet revolution was at hand.

MICROsearch

At the same time that ERIC was experimenting on how to best make use of the new CD-ROM technology, the system was also looking at how it could make more effective use of microcomputer technology. The personal computer (PC) quickly made its mark, as described above, in making office procedures more efficient and comprehensive.

In addition, thanks to a brilliant marketing move by Apple Computer, microcomputers established a permanent place in our nation's schools. Don Ely of the IR Clearinghouse observed that in a relatively short time period, the microcomputer "found its way into over 90% of the public schools in the United States. The numbers tell us that there are more than a half million microcomputers in the elementary and secondary classrooms of the United States."[13]

Now, ERIC staff were questioning if a comparable type of change that had taken place in the world of work could be extended to the database itself, i.e., for users in libraries and schools. The answer to this question was a special pilot project called MICROsearch. This was, in essence, the system's "first attempt to take ERIC off of the online services and put it into people's hands in schools."[14]

The MICROsearch project actually began as two companion contracts let in 1981 to the ERIC Clearinghouse on Information Resources (IR) in Syracuse, New York, and the ERIC Clearinghouse for Science, Mathematics, and Environmental Education (SE) in Columbus, Ohio. The mandate of both contracts was to develop and field test appropriate software for the Apple II Plus computer; both clearinghouses were to develop search and utility packages. IR concentrated on developing software for the non-online user, using diskettes of CIJE citations that matched profiles of the holdings of particular institutions or school districts. SE targeted online users, working with the Columbus-based CompuServe, Inc. In dividing the scope of the work, SE focused on RIE and left CIJE to the Information Resources Clearinghouse.

In 1982, the SE clearinghouse completed their contract. The summary paper reported that based on the study, the materials developed and under development, and potential user comments, "we have mounted information files with CompuServe as projected. We believe combinations of current technology allows us new delivery systems for ERIC information and we plan to continue development and offering services with our own resources."[15]

While SE's contract ended with the above-referenced agreement with CompuServe, the IR Clearinghouse continued its pilot work in developing pre-packaged diskettes. The IR search package was given the name MICROsearch. Users were given the MICROsearch package along with database citations that contained 200 citations matching their profiles of interest. The IR Clearinghouse report stated that according to a recent usage survey, "89% of those purchasing MICROsearch used it as a tool for teaching the basic concept of online searching, while 66% used MICROsearch for end-user searching."[16] The IR report concluded that MICROsearch was useful for disseminating ERIC in an alternative form and for teaching users as well.

In July 1985, IR was awarded a follow-up contract to develop a PC version of MICROsearch. Information Resources Clearinghouse staff noted with pride, "As the IBM PC market increases, so has the interest in MICROsearch for the PC."[17] Two years later, MICROsearch had 60 subscribers receiving quarterly updates. According to IR's formative evaluation, customers reported great satisfaction with the program, which by now had been standardized.

In 1987, the Information Resources Clearinghouse was awarded a third contract—this one to expand the scope of the database beyond the original two domains of educational technology and library/information science information *and* to include the complete ERIC record, with abstract. A companion purpose of this contract was "to address extension of [the] floppy disk effort to more accurately assess its potential for broad distribution of ERIC on floppy disks containing a wide variety of material from the ERIC database."[18] While the project was able to expand its scope, it was not successful in putting the full abstract on the diskettes because of their limited storage space. As Project Monitor Kevin Arundel notes, "The technology just wasn't there yet."[19]

For the remainder of the 1980s and through the beginning of the 1990s, the MICROsearch project remained for many a viable alternative means for using and exploring the ERIC database. However, as technology was changing radically, by the mid-1990s usefulness of the MICROsearch diskettes faded. For a decade and a half, though, it served as a unique approach to user services.

The Advent of CD-ROM Technology

As noted at the start of this chapter, the introduction of CD-ROM technology in the mid-1980s was met with much hoopla. Former ERIC director Bob Chesley testified to the following in 1987:

> The most exciting technological advance for information systems in recent years is the emerging development of Compact Disk-Read Only Memory (CD-ROM) technology. Six or seven years of ERIC document indexing and abstracting can be contained on one CD-ROM disk which can be reproduced at minimal cost. Three companies are presently marketing CD-ROM search systems for the ERIC file. In the next few years, many libraries will have the capability to search library reference materials on CD-ROM, and some already have the capability. When this relatively inexpensive technology is more widely available, as computers are today, it will place the capability of performing quick and inexpensive searches of ERIC in the hands of most educators at the local level.... Then, the ERIC system can proceed in the role for which it was designed: an information system that will provide the data on which to base rational decisions regarding change and improvement in education.[20]

According to Dianne Rothenberg, much of the credit for linking ERIC up with this new technology belongs to Ted Brandhorst of the Facility: "ERIC had more than a small role in how CD-ROM search engines came about, as you know, through Ted's [Brandhorst] work, with SilverPlatter."[21]

In a paper presented at the ONLINE '86 Conference, Brandhorst provided a first-hand account of ERIC's decision to embrace CD-ROM technology:

> Within its limited resources, ERIC tries to keep up-to-date with the technology. ERIC uses state-of-the-art photocomposition technology for its abstract journals. It employs advanced step-and-repeat cameras and blowback cameras in its micrographics operations. It takes advantage of the inventiveness of the online vendors. It has interconnected the clearinghouses with an

> electronic mail system. It is encouraging the rapid proliferation of microcomputer technology throughout the Clearinghouse network. Many developments are promoted by an internal Technology Committee. The ERIC Technology Committee focused on CD-ROM technology about two years ago and encouraged ERIC to move in that direction. The venture that ORI[22] is making jointly with SilverPlatter, is partly a response to that encouragement.
>
> The impact on users will be great. Users will be left alone at their CD-ROM stations, free to do anything they want, without fear of reprisals. We see a lot more people exposed to searching than ever before. We see users better able to take advantage of interactivity and browsability and eventually learning to search better because of the built-in HELP information. We see interfaces being built between CD-ROM systems and online systems, so that the user can go from one to the other easily. We see an explosion of use in the far corners of the world where online is still too expensive because of telecommunications costs.
>
> Time will tell about all this, of course. For the moment, we are just trying to take advantage of a new technology.[23]

What time did tell was that this was a prescient decision. In the following reminiscence, Brandhorst looks back at this decision a decade after the fact:

> Another major accomplishment was going to SilverPlatter in about '83 or '84… and suggesting that the ERIC database be put up on SilverPlatter. They were one of the very early CD-ROM organizations. We were coming into a competitive proposal situation. We wanted to have a big winning idea—a bombshell winner—and bringing ERIC out on CD-ROM was going to be that winner for us. So we went to SilverPlatter and got them to take ERIC and put it out and we entered into a relationship with them that lasted several years. It was their first major product. What that accomplished for ERIC was to get ERIC out there as one of the earliest databases on CD-ROM. That was a nice achievement.[24]

Phyllis Steckler of Oryx Press also hails ERIC's debut on CD-ROM as a major achievement: "The decision by SilverPlatter to bring the database out on CD-ROM when it did—as one of the first products—was a wonderful, wonderful decision. It made a big difference."[25]

In 1987, SilverPlatter was joined by two other CD-ROM vendors, Dialog Information Services and OCLC, in offering ERIC via CD-ROM. It was estimated in 1988 that there were 2,500 subscriptions to ERIC on CD-ROM, although the system noted that it was difficult to estimate the true number of users since "hundreds of university, school and public libraries now have CD-ROM workstations dedicated to ERIC, which clients use on their own or with minimal assistance and without much recordkeeping."[26]

In 1992 and 1993, it was estimated that there were 2,000 CD-ROM subscriptions to ERIC's (now) two vendors, SilverPlatter and Dialog.[27] By 1995, the number of CD-ROM vendors had grown to four. In April 1995, ERIC had made arrangements with the National Information Services Corporation (NISC) to buy their product wholesale and resell it "at cost" to the education community. Thanks to this arrangement, an ERIC CD-ROM product was now available for only $100 a year, making school utilization of the product commonplace. CD-ROM technology has proven to be a relatively inexpensive way of putting the database directly into the hands of ERIC's many users.

As this book is being completed, there is, however, some question as to the future of the CD-ROM. Phyllis Steckler of Oryx Press, which is itself a publisher of CD-ROMs, believes that the market for CD-ROM technology may not remain stable:

> The interest in CD-ROMs is now declining. Many publishers are leaving the CD-ROM business because they have not been successful in having achieved the numbers of copies that were necessary for them to break even.

> CD-ROMs have limited applicability because one person uses them at a time. A school library is not networked the same way as a large public library is networked today. So you have a paradigm shift in technology based on whether you are going to a public library, a college library, or school library—based on whom the users are in those institutions and what the materials are.
>
> The prices are getting lower when they really have to get higher, because the number of copies they are selling are lower. Therefore a lot of companies are lessening their activities with CD-ROMs.[28]

As Ted Brandhorst said at the birth of ERIC on SilverPlatter, "Time will tell about all this, of course."[29]

ERIC Digests Online

As noted in Chapter 3, ERIC Digests are considered to be one of the most prized features of the ERIC system. These one- to two-page syntheses of research data, first developed in 1981, provide practitioners—as well as the total ERIC audience—with a quick way of accessing information.

With technology sweeping through every aspect of life in the 1980s, the idea soon germinated that these short Digests might be easily included *in toto* in a companion file to the ERIC database. Kevin Arundel describes the simplicity of the idea:

> The Digest idea just took off. And then it was the Digest File idea. It was PS [the Elementary and Early Childhood Clearinghouse] that came up with the idea. Dianne Rothenberg and Mima Spencer came in and said, "We'd like to put this information on some sort of a file." And so we worked together. That was the start of the Digest Project Online.[30]

In many ways, the ERIC Digests Online project (or EDO, as it was commonly called) was a pioneering effort. This was, after all, the first time that full-text copy was being entered directly onto an ERIC database. What this did was enable searchers to have immediate access to the digests, without having to request paper or microfiche copy. It was truly an innovative breakthrough for the system.

The project began as a one-year pilot study awarded to the PS Clearinghouse in 1984. Mima Spencer and Dianne Rothenberg, the co-project directors, described the historical context in a report:

> In the early 1970's, educators and other online users were clamoring for online delivery of full texts of the documents they had located when searching databases. They wanted immediate access to document content that could be downloaded or printed out. Early in the 1980's, technological developments occurred that greatly increased the speed of data processing and computer capacity for data storage, making full-text database development more feasible.
>
> Already popular as print products, digests seemed particularly well-suited in terms of format, length, and content to become the basis of the first full-text database. The accumulated collection of 143 ERIC clearinghouse digests provided the initial EDO.... [Initially], the full-text EDO file was intended to complement the ERIC bibliographic database.[31]

A major part of the feasibility study was to find an online vendor interested in carrying EDO. Dialog and BRS were longtime partners with ERIC. However, the envisioned database was just too small for these companies to find the project feasible. Two other vendors were, however, interested in the EDO venture: CompuServe and ED-LINE on The Source. In the end, The Source's ED-LINE was selected as the initial EDO vendor.

At the end of the pilot year, the Clearinghouse on Elementary and Early Childhood Education (PS) was awarded a three-year follow-up implementation contract. As a first step, a field test of 48 documents was conducted at 12 sites. The results of this formative evaluation were incorporated into the design of the files. ERIC Digests formally went online to the public on April 1, 1986. There were 110 digests in the file. *ED*LINER*, the newsletter published by ED-LINE, announced EDO's inauguration as its lead story:[32]

> *ERIC DIGESTS ONLINE!*
>
> A brand new information service designed to give education leaders a fast, accurate summary of key education issues will be available exclusively on ED-LINE's National Network's menu starting April 1, 1986.
>
> Called ERIC DIGESTS ONLINE (EDO), the new service consists of over 100 digests on issues that ERIC considers of critical importance to educators. New digests will be added to EDO monthly.... Digests will be deleted when they no longer are current.
>
> "Now it will be easy for busy educators to get up-to-date summary information on critical topics without having to personally review hundreds of documents," explains Mima Spencer, director of the EDO project.
>
> In addition to reading the digests, a special feature of EDO invites users to comment on the digests, or read others' comments. This feature allows users to benefit from the sharing of opinions from educators across the board.

Project staff had but several short weeks to celebrate their successful launching of EDO before what was termed an "unexpected setback" occurred. Here is how Spencer and Rothenberg described the event:

> After the initial euphoria that accompanied the public unveiling of ERIC Digests Online, a major setback to contract plans occurred. In May, 1986, just one month after the file became publicly available, The Source announced that all "private" networks on The Source, including ED-LINE, would be required to use its new Product Development Software as of September 1. This change meant that EDO had to be reprogrammed to work with the new software. Every digest in the database would have to be reformatted offline and re-uploaded, and all menus would have to be re-constructed. The amount of work this would entail for project staff was staggering. Moreover, the software changes meant that storage costs would be greatly increased, as the new software stored the digests twice (in two different formats) in order to provide both keyword and menu access, and also stored the menus twice (in publicly-visible and work-space version).
>
> After consultation with CERIC project monitor Kevin Arundel on the need for allocation of staff time and project funds, it was decided that project staff would try to meet the deadline for reprogramming to ensure new EDO users uninterrupted access to the database.
>
> As expected, an impressive amount of work was required to convert the original EDO database to the requirements of the new software, but the September 1 deadline was met.[33]

As this anecdote relates, the ERIC Digests Online project did not lose momentum. By the start of the third contract year, 210 Digests were posted on the EDO file. In January 1988, EDO was made available through a second vendor, the University of Illinois' PLATO system. The Digests were so popular that they were continued beyond the term of the pilot study. The ERIC Processing and Reference Facility took over responsibility for the EDOs within a few months of the project's end date.

In 1993, the ERIC Program Office decided to expand upon the EDO concept by making the various digests developed by other Department of Education-funded sources accessible to ERIC users. ACCESS ERIC was assigned a special project to locate such documents at research centers, educational laboratories, and professional associations and forward them to the Facility for possible inclusion in the ERIC database and EDO file, if they met ERIC standards. The staff discontinued this effort after 18 months because it did not prove cost effective. A great deal of labor had been expended in locating a relatively small number of suitable publications.

The legacy of the EDO Project remains strong today. Over time, the Digests have only grown in stature. In addition to their regular inclusion in the database, the Facility creates separate magnetic tapes of the Digests which are sold to interested organizations. A full-text searchable collection of more than 2,000 ERIC Digests, hosted on the Department of Education Web site, is visited an average of 20,000 times a month.[34]

UMI (University Microfilms, Inc.) Full Text Pilot Project

The UMI (University Microfilms, Inc.) Full Text Pilot Project was in actuality two parallel projects: one aimed at the traditional database user (the Compact ERIC Prototype Project (CEPP)) and the other at a school audience (the School Disc Project). The project grew out of discussions in 1989 between Bob Stonehill and Garry Walz with representatives of UMI on the possibility of developing a more extensive ERIC product on CD-ROM—one that was not available through any other means. The project directors of the Compact ERIC Prototype Project provide this historical overview of CEPP:

> As originally conceived, Compact ERIC would include the most important 15% of the document and journal input to the ERIC bibliographic database in full text. The items for inclusion would be selected by each of the ERIC

> clearinghouses. In addition, the clearinghouses would identify 100 of the key journals in education for complete (cover-to-cover) full-text inclusion in Compact ERIC. The number of EDs, ERIC journal articles (EJs), and cover-to-cover journals should be proportional to their total input into the ERIC database. [N.B., the quotas assigned to each of the participating clearinghouses were based on their 1990 contracted contributions of EDs and EJs.][35]

To develop the prototypes for the "Best Of ERIC," as both strands of this project came to be known, the clearinghouses each determined their top 15 percent of documents and journals and decided which journals should be featured cover-to-cover. A liaison at each clearinghouse coordinated efforts.

As the clearinghouses made their selections, the information was forwarded to the Facility. The Facility then verified accession numbers and generated tapes to send to UMI, along with the physical text of the EDs to be included. In November 1990, the development phase of the UMI Full Text Pilot Project was concluded, having produced the following:

> A total of 433 EDs and 528 EJs were selected for inclusion as full text in the Prototype (estimated at 10,825 and 5,280 pages respectively). Some of these were later changed or deleted, because they were not available at the Facility. These included Level 3 documents [i.e., those documents announced in RIE, but for which neither hard copy nor microfiche was available], and documents that had not entered the database in the first or second quarters of 1990. Robert Stonehill and Ted Brandhorst also conducted a final editing of entries before sending them to UMI. The final totals sent to UMI were 357 EDs and 531 EJs. On November 2 [1990], UMI reported that the combined number of ED pages for both Compact ERIC and School Disc prototypes was 36,000, an average of 45 pages per document. Therefore, for the Compact ERIC Prototype, there are 16,065 pages of documents. For selected articles (EJs), the estimate is 10 pages per entry, or 5,310 pages.[36]

With the project directors having declared the UMI Full Text Pilot Project a "success"[37] in early 1991, the two prototypes were readied for field testing at eight sites around the country. The field test yielded mixed results. While the products themselves were successfully developed according to plan, their viability in the market was questioned.

The prime impediment was cost. Originally, the ERIC Program Office had requested that a multi-platform product be developed. UMI, afraid that such a product would not work well, decided to bundle the compact disk with the equipment that ran it. This meant that Compact ERIC users had to buy an entire package—at a cost of $15,000—from UMI. The field test showed that users were just not interested in spending that much money.

Dianne Rothenberg summarized the problem:

> While the retrieval package was powerful and the page images were displayed with excellent resolution, pilot test results were not encouraging. Librarians reportedly were concerned about the length of documents that patrons wanted to print at library expense, and about the cost of a workstation and the CD-ROM that UMI wanted to market as a package or workstation (at about $15,000). The state of the economy at that time was a contributing factor to the decision not to continue the project.[38]

Former ERIC director Bob Stonehill looks back on the project wistfully:

> One of the things that we invested a lot of time and effort in—that was pretty far-reaching for its time but never went—was the UMI partnership. We actually got to see a prototype that worked; it was great. But at that time the technology was just a little too primitive. Now, CDs are in every computer that is being built. So we had the right idea. It was just a decade ahead [of its time].[39]

Jeanne Rennie of the Languages and Linguistics Clearinghouse (FL) has a somewhat harsher memory of the project:

> The one thing that sticks in my mind, that I had doubts about from the very beginning, and that turned out to be an obstacle, was the experimental full-text CD-ROM.... I was concerned about it for a couple of reasons, one of which was because they were calling it the "Best of ERIC." They wanted the clearinghouses to be selecting their best documents. But there were no standardized criteria.
>
> To have any validity, you would have to have a couple of people looking at all the documents. What we did to comply was to ask the reviewer, "Would you recommend this to be included in the 'Best of ERIC' file?" "Do you think it's really outstanding?" But that's a very vague sort of thing. I was uncomfortable with [the way we did] it, but I didn't have the time or the resources to do otherwise. I thought this was a very serious drawback.
>
> My feeling was that if you're going to go full text, you need to find a different way. Either you put up the last five years or you put a certain kind of document in—something that you can quantify. If you're going to have quality, then you need to have very clear criteria that you can tell people you used to implement these decisions.
>
> It seemed clear from the beginning that the whole thing was going to be problematic. Someone who really wants a full-text disk is going to want a full-text disk of documents from one clearinghouse. Who's going to want a few documents on foreign languages and a few documents on Higher Ed and a few on rural schools? It just didn't seem like a good idea to me. In the end, though, maybe it wasn't such a bad idea because their test run showed that people wouldn't spend that kind of money.[40]

Judy Beck, formerly of the Teaching and Teacher Education Clearinghouse (SP), has a more balanced assessment:

> In hindsight, I think the idea of having the Compact ERIC and School Disc projects was a good one. But—jumping down to the question about things that should have never taken place—was the tying of that to a hardware platform. It drove the price

> up. And from what I know about it, that really killed the project.[41]

While the “Best of ERIC” was an intriguing concept, it only served to whet everyone’s appetite for full text of the entire database (see Chapter 5). Its legacy, though, are the 800 (Compact ERIC) and 801 (School Disc) codes used by the clearinghouses to tag their “Best of ERIC” documents and journal articles.

The UMI Full Text Pilot Project, like all of the special projects described here, was successful if for no other reason than it advanced the system’s use of technology. This technology transformed the workings of ERIC and the way it disseminated information. It also broke down the distance separating components. While remaining decentralized, the various ERIC components were forced to come together as a team.

Chapter 5

Enter the Internet: Phase II of Technology's Impact on ERIC

The hot topics are technology, technology—and when we're not sure what it is, it's probably technology.

–Mike Eisenberg, 9/25/96

I think back to what ERIC was 15 years ago—a dusty microfiche collection. Compare that to what we have now with some really sexy Web pages.

–Larry Rudner, 9/4/96

By the early 1990s, the technological advances discussed in Chapter 4 had already changed the way ERIC looked and operated. Yet these transformations paled next to the changes that would occur in the wake of the next coming technological phenomenon—the Internet.

In 1992, the Internet was ready to take off. The fact that ERIC was able to recognize its power at this beginning point is testimony to the system's good judgment. Jeanne Bleuer applauds this timing: "One of the things we were right on target with—and I'm sure you'll hear this over and over—is that we got onto the Internet ahead of the game. I'm really proud of that.[1]

Ted Brandhorst regards ERIC's relationship with the Internet as a systemwide effort:

> Getting on the Internet early—that certainly was an on-target decision. It probably actually started out at the IR Clearinghouse. But then, I think, the management of ERIC pushed it internally because they could see the positive aspects of it. The initial impetus came from some of the forward-

> looking people at the clearinghouses—people like Mike Eisenberg and Dianne Rothenberg and a few others.[2]

SMARTLINE

ERIC's first introduction to this new technology was through its parent organization, OERI. During the early 1990s there was a push at OERI to support its mission of offering useful and current information to the education community through the creation of something called SMARTLINE (Sources of Materials And Research about Teaching and Learning for Improving Nationwide Education). SMARTLINE, which was the pet project of former Assistant Secretary for Educational Research and Improvement and Counselor to the Secretary, Diane Ravitch, had no less a goal for the network than to make it available from workstations in each of the nation's 75,000 school libraries and 15,000 public libraries. Just as ACCESS ERIC has striven to be the one-stop shopping point for ERIC, SMARTLINE was to be the one-stop network for all of education:

> SMARTLINE will enable users—through computers, telecommunications, and people—to tap numerous information sources; SMARTLINE will be both a repository of critical information about education as well as a sophisticated reference and referral system to put users in direct contact with federal agencies, institutions, national organizations, and individual experts.[3]

In testimony before the U.S. Senate, Ravitch laid out her vision:

> When fully implemented, SMARTLINE will provide up-to-date information on:
>
> - research results and statistical information on education;
> - promising programs and practices;

> - an educational job bank for teachers, including every school and community members;
> - sources of advice and assistance to educators, parents, and community members; and
> - current funding opportunities for individuals, school districts and schools… in a database that includes information from each federal agency not only the Department of Education.
>
> As SMARTLINE evolves, it will become the first stage of U.S.A. On-Line. U.S.A. On-Line will be the Department of Education's comprehensive effort to provide educational information and instruction to individuals in schools, homes, libraries, and workplaces. SMARTLINE will be part of the NREN[4]superhighway for educational technology, and many providers—public and private—will be able to disseminate information and ideas.[5]

As a group, ERIC rallied behind SMARTLINE's lofty goals. As Mike Eisenberg said in Senate testimony in March of 1992:

> I appreciate the opportunity to bring you up-to-date on the substantial progress of the ERIC system since the 1987 oversight hearing and to explain how ERIC is ready, willing, and able to make a significant contribution to SMARTLINE, USA-Online, NREN and other initiatives aimed at improving information access and use by teachers, administrators, parents, and students.[6]

Yet, while lauding the idea, in internal correspondence, clearinghouse staff were clearly struggling with how SMARTLINE could possibly come to fruition. Their files contain the following comments in memoranda and e-mail:

> "I am concerned about any system that bills itself as a "one-stop" network for easy access to any kind of information. Online services have traditionally overestimated their ability to deliver "comprehensive" information and then disappointed their users. At least in its initial configuration, SMARTLINE will NOT provide comprehensive anything."[7]

* * *

Enter the Internet: Phase II of Technology's Impact on ERIC

> "The distinctions between USA On-Line and SMARTLINE are unclear. I understand that USA is both information and instruction and that SMARTLINE is the first effort on the information side. But really, can USA On-Line be much more than SMARTLINE? In terms of SMARTLINE, they are naïve about the role of ERIC. I know the political line about ERIC being non-sexy, but damn, it works!!!"[8]

* * *

> "This MUST be a part of the INTERNET. Forget everything else. We can't keep dialing new services."[9]

A small group meeting on SMARTLINE found themselves perplexed over how best to respond to SMARTLINE, as these concluding minutes to the meeting reveal:

> Many present questioned the purpose of the group which came together to discuss SMARTLINE. Are we to do more than just attend this one session? Are we to form a working group that can start to feed information to Diane Ravitch and others on this idea? Do we want to develop an actual concept piece or share concept pieces from various individuals with this group?[10]

The debate over SMARTLINE did, however, have one extremely positive outcome: it got ERIC on the Internet. Keith Stubbs describes these beginnings:

> When the Internet came along and we were putting together the thoughts for INET[11] and how the Department would use the Internet, the major resources that it seemed we had to put on the Internet were ERIC resources. So we started with the ERIC Digests and got them onto the Internet in various places—down in North Carolina and the University of Maryland. It helped ERIC get acquainted with the Internet and the Internet got acquainted with ERIC. This was a rich body of material and the Internet experimenters were looking for

> bodies of content to work with, particularly in the area of education.
>
> Then, when the Internet took off, over the last few years things didn't turn out at all the way we planned. They turned out a lot better.[12]

From this initial attempt to apply the new Internet technology was born one of ERIC's most prized accomplishments. A serendipitous outcome of the work on INET and SMARTLINE was AskERIC.

AskERIC

Begun in November 1992 as a special project of the Information Resources (IR) Clearinghouse, AskERIC has grown into one of the ERIC system's best known features. As noted above, its roots can be found in the clearinghouses' attempts to respond to SMARTLINE. In an e-mail communication with Dianne Rothenberg, Mike Eisenberg insisted that the key to SMARTLINE was the human touch. He wrote:

> To make SMARTLINE work will require a direct, quick major contact in the schools and for the general public. We agree with Diane Ravitch that school librarians and public librarians do much to fulfill this role. Emphasis on and improvement of education and training of librarians will help. In addition to local librarian help, SMARTLINE should include a method of contacting human help and referral services on the network.[13]

It is the "human help" that distinguishes AskERIC, as an information sheet on the project notes:

> The hallmark of AskERIC is the human intermediary, who interacts with the information seeker and personally selects and delivers information within 48 hours of receiving an inquiry. The benefit of the human-mediated service is that it allows

> AskERIC staff to determine the precise information needs of the client and to present an array of relevant resources, both from the ERIC system and from the vast resources of "the Net."[14]

The guiding light behind AskERIC was, as noted, Mike Eisenberg, former director of the IR Clearinghouse. The benefactor was then ERIC Director, Bob Stonehill. Here are the recollections of some of the key players in this watershed project:

> *From Mike Eisenberg*: The SMARTLINE initiative was floated by Diane Ravitch in the Department. It was going to be the end-all information system. You put in a couple of things and out comes a digested, synthesized answer to your question. In every classroom. And they do it for nothing. For a couple million dollars or something like that. It was so naïve.
>
> But instead of saying "No" to that, we hunkered down and said "How can we deliver on this product?" And that's how we came up with the idea for AskERIC. AskERIC is SMARTLINE and that's where the original AskERIC money came from. Very grudgingly. They did not want to give us SMARTLINE money and they did not want to fund something as mundane as "You mean people answer the questions? What happened to artificial intelligence?" And we said, "We have something better. We have natural intelligence."[15]

* * *

> *From Kevin Arundel*: I think one of the really good things that [Bob] Stonehill has done—and I've got to give him credit for—was AskERIC. Because a number of us—when he wanted to get AskERIC going—said, "[We] think it's a great idea… BUT… we've… got limited resources and we can't shortchange the clearinghouses and the rest of the system." Well, some of us would argue that he did. But, on the other hand, it was a good move to make and it has made a difference.[16]

* * *

> *From Bob Stonehill*: As the Internet became kind of popular—as we saw it starting to get important—we decided ERIC's mission would be to ensure that when people got that connectivity, there would be something there for them. So we never worried about the access issues or the connectivity or the infrastructure issues, but dedicated ourselves to ensuring that the education resources would be very rich and very easily obtainable, and that we wouldn't be selling an information superhighway that didn't go anywhere.
>
> The AskERIC idea came from Mike Eisenberg and others at Syracuse. They had conjured up something in their mind like an Electronic Librarian concept. It wasn't really an electronic librarian that we were talking about. It was a real, live human being at the end of an e-mail message who would do whatever it took to provide the response. Again, it was a way of building support for the Internet and for Internet applications without just saying, "Oh, the Internet is important. Oh, everybody has to get connectivity." It was by offering a service that was attractive to people. By creating a need. Creating needs for that connection.
>
> The people at Syracuse really made it work. And we supported it—the Department with initial money and continued funding every year. It just took off so quickly and immediately started generating "thank you" notes from people. That was really the first kind of interactive application of e-mail and the Internet. [17]

For many users, AskERIC was indeed their first experience in using the Internet to retrieve information. What AskERIC did so beautifully was to help educators and lay people make use of the Internet, in a nonthreatening, personal way. As David Haury of the SE Clearinghouse put it, "I think that the AskERIC service has made ERIC real to a lot of people who were before totally disengaged from the ERIC system."[18]

AskERIC was originally targeted at K–12 teachers, administrators, and media specialists, though obviously helpful to all concerned with elementary and secondary education. Anyone with a question could send it to AskERIC and receive a response in 48 hours. By 1993, the audience was officially expanded to "all individuals interested in education issues."[19]

When AskERIC began in 1992 as part of the SMARTLINE initiative, it was using three state networks: NYSERNET (New York), TENET (Texas), and SENDIT (North Dakota). A year later, another seven state networks were providing access to AskERIC (California, Massachusetts, Florida, Minnesota, Nebraska, Idaho, and Connecticut). In addition to the Question and Answer service, in February 1993, IR created the AskERIC Virtual Library, which became a repository for answered questions, ERIC database searches, Digests, information guides, and the like.

By 1994, AskERIC was a major presence on the Internet, having joined the World Wide Web. The program was now answering an average of 286 questions a week. A user survey conducted in December 1994 yielded highly satisfactory results: 95 percent of users were satisfied with the speed of the response, 88 percent were satisfied with the quality of the response, and 97 percent would recommend the service.

AskERIC ensured that the answers to questions were not just speedy, but of high quality, by involving the entire ERIC system. Questions were fielded out to whichever clearinghouse covered the subject of the question in its domain. The project, through its funding, was able to support the assistance of in-house experts at the clearinghouses. Steve Stroup of the Reading, English, and Communication (CS) Clearinghouse is highly supportive of the process:

> The AskERIC service that the system is offering is encouraging us to do more and more, because it does provide the funding we need to hire people sufficient to take that extra 10 minutes to track down things that we would have just before said, "I have 15 other questions here I've got to answer today, and I'm the only one here." Well, now, because of the funding, I can hire two assistants and suddenly I can take that extra half-hour and do a much, much better job than anyone could have done before, just due to the limitation in resources that we had. I hope the program continues, because I think it's an invaluable service.[20]

The same type of praise that the program received from colleagues within the system was bestowed upon AskERIC by users and observers of the Internet. Of particular note was the program's nomination as a finalist for the *Computerworld* Smithsonian Award in the category of education and academia. Mike Eisenberg relates the pride this award brought to the IR Clearinghouse:

> One of the things we are most proud of is the nomination for the *Computerworld* Smithsonian award. It's phenomenal. Just to be nominated is like being nominated for an Oscar.... The nomination itself—being in the Smithsonian for a year—was important. It means a lot more than being named among the top five Web sites.[21]

By 1995, AskERIC now had three components: an electronic question/answer service, the AskERIC Virtual Library, and Internet access to the ERIC database. Staff were answering an average of 454 questions a week as the program grew, and received further recognition and awards. *InterNet World* cited the AskERIC Virtual library as one of the top 10 education sites. The program also received a major equipment grant from Sun Microsystems and was designated one of two SunSITES in the United States. To this day, Sun Microsystems remains one of the underwriters of AskERIC, along with the U.S. Department of Education and Syracuse University.

Enter the Internet:
Phase II of Technology's Impact on ERIC

AskERIC continued to reap awards as it responded more and more to its users' needs. By 1996, it was the recipient of 11 awards, including being named by Global Network Navigator (GNN), Publisher of *The Whole Internet Catalog*, as the best professional site on the Internet. 1997 also marked the receipt of the program's 100,000th question.

To make the program ever more responsive to user needs, an AskERIC Summit has been held annually since 1994. Keith Stubbs provides this glimpse into the summits:

> There's a meeting every year of people who are involved in AskERIC, primarily in the question/answering part of it, although the Virtual Library comes into play.... This year I think there were representatives from at least a dozen clearinghouses, maybe more, as well as the support components. It's grown every year.
>
> The AskERIC Summit was a day and a half or two days, and there was a lot of discussion about question/answering. What sort of questions were within AskERIC's scope and which ones were beyond it? For example, some questions take you beyond the realm of education and into counseling. Particularly when parents start asking about their children, it can rapidly become something that, really, their doctors should be answering rather than ERIC.
>
> There was some discussion about the extent to which AskERIC should be a window into the ERIC database. Also, to what extent should ERIC be teaching people literacy and information searching behaviors, and how to use the ERIC database—and to what extent should the ERIC database be used solely for answering questions?[22]

Today AskERIC is poised as one of the most active and revered sites on the World Wide Web. Its Virtual Library contains more than 250 information guides (topical guides to the Internet, ERIC, and print resources) and in excess of 11,000 K–12 lesson plans. AskERIC manages and archives more than 40 listserv discussion groups and maintains an AskERIC Toolbox, which lists other Internet resources that AskERIC staff have found helpful. In addition, the online ERIC database can be searched at AskERIC's Web site.

In 1998, AskERIC was answering an average of 3,675 questions a month. On peak weeks during the school year, the number of questions exceeded 1,000 per week. Each response was individualized and referred the questioner to appropriate database items, Digests, and Internet resources, and provided a listing of the descriptors used in the search. This is all the more impressive in that, according to the 1998 AskERIC User Survey, "there are no 'typical questions'" asked by users.[23]

As its Web site advertises, AskERIC provides "Education Information with the Personal Touch." AskERIC made ERIC's debut on the Internet an overnight sensation and one in which the entire system could take pride, as is evident in this recollection shared by Dorothy Myers:

> The Information Resources Clearinghouse was certainly a driving force in ERIC. Mike Eisenberg and Don Ely were at the forefront. There was a dinner. I can't remember who exactly was there—I think it was Ely. But the Secretary [of Education] was there. Al Gore was there....
>
> Well, the people there knew about AskERIC.... I remember the word coming back that the Vice President had heard of AskERIC and that it fit into his agenda. That was exciting for us. Before then, it was hard sometimes to even get someone at the Secretary's level, or that high, to even recognize that ERIC was a program.[24]

We close this section on AskERIC with Bob Stonehill's retrospective view of the initiative:

> AskERIC was really a great model, in fact, for the Department on how you use customer services and customer feedback to condition the nature of content that you provide and the nature

> of the services you provide. To this day [it] persists, I think, as a model of how you build information resources to meet the expectations and needs of customers. We tracked every inquiry we got and collected resources to address, in an off-the-shelf way, the kinds of questions that routinely came up. That led to the collection of lesson plans and the development of lesson plans. It led to connections to groups like Discovery Channel and PBS's Newton's Apple. At that time, the channel-conscious world didn't really know how to do Internet things themselves and turned to us to do it. [25]

NPIN

The ERIC system's second major entry onto the Internet, the National Parent Information Network (NPIN), occurred in 1993. Like AskERIC, NPIN was a groundbreaking effort, as Bob Stonehill points out:

> The National Parent Information Network was a pioneer effort into a world in which only a tiny, tiny percentage of the people in that community had Internet access. But they knew it was going to come. And one of the reasons it was going to come was because that application was so persuasive. How else do you have access to all the information in the world when you can't afford to buy a book? The answer is—with the help of others. [26]

Begun as a partnership between two clearinghouses, Elementary and Early Childhood Education (PS) and Urban Education (UD), NPIN is an electronic information center for parents and those who support and work with them. In an interview in the *ERIC Users' Interchange*, PS director Lilian Katz had this to say about the founding of NPIN:

> Parents have fewer family members close by these days to ask for advice on finding a preschool, working with their child's

> teachers, or helping their shy child make friends. They need high-quality information from reliable sources, and sometimes they need subject experts to talk to. Many parents would like to use the "information superhighway" to find such information, and NPIN will help them do that.[27]

NPIN co-founder Erwin Flaxman, the longtime director of the Clearinghouse on Urban Education (UD), undertook this effort to be responsive to an often unreached audience:

> We were active creators of the National Parent Information Network. We wanted to reach out to parents—a very hard to reach and in many ways a disenfranchised element in our population. We develop resources especially for them and disseminate them. It's a major accomplishment.[28]

In addition to providing information to parents, NPIN provides a variety of materials for individuals and organizations that work with families. A consortium of organizations contribute materials to NPIN and promote its use among their constituencies. In 1993, these organizations included the National Urban League, the National PTA, and the Center for Adolescence. The growing list of collaborators now includes, in addition to the founding members of the consortium, The Center for Schools, Families, and Community Partnerships; the National Association for the Education of Young Children; and the National Fathers' Network.

Larry Yates, the associate director for NPIN at the UD Clearinghouse, explained how NPIN operates:

> We are working with organizations and low-income parents and minority groups to encourage them to become full participants in electronic networking. NPIN offers parents and those who work with them a family-friendly environment for finding information they can use in their daily lives.[29]

Enter the Internet:
Phase II of Technology's Impact on ERIC

During its inaugural year, NPIN was a part of Prairienet, the local East Central Illinois FREENET. This arrangement, while practical, was not yet ideal, as Larry Yates commented on in a letter:

> As with any infant, NPIN is more potential than actual; its present state hardly resembles what it will be in its mature state. It exists as a Gopher[30] (menu) system on a computer at the ERIC Elementary and Early Childhood Education Clearinghouse (ERIC/EECE) and can be accessed through Prairienet, which is a community network. Anyone who can connect their computer directly to other computers on the Internet can get to NPIN. However this route is much less convenient than its future, direct route through the International Gopher system when it's ready for widespread use.[31]

A year later, in 1994, NPIN was a major presence on the Internet, thanks largely to an equipment grant to the PS Clearinghouse from Apple Computer. This grant enabled PS to develop its own World Wide Web server on the Internet to be "specifically devoted to child development and the care, education, and parenting of children from birth through adolescence."[32]

Dianne Rothenberg describes what a meaningful landmark the Apple grant was to the clearinghouse:

> The Apple equipment grant that we got to help sponsor and make an Internet home for the National Parent Information Center was a watershed event. It was confirmation from outside ERIC that what we were doing had national implications. I think it's been a huge morale boost for people here.[33]

At its Internet home, NPIN explains its mission as follows:

> The mission of NPIN is to provide access to research-based information about the process of parenting, and about family involvement in education. We believe that well-informed families are likely to make good decisions about raising and educating their children.

In addition to providing parenting information material, NPIN conducts workshops on using the Internet to support parents, sponsors a question/answer service for parents and parent educators that links to AskERIC, moderates the PARENTING-L listserv, distributes a parenting calendar, links users to state parenting networks, and publishes the award-winning *Parent News*, a bimonthly electronic magazine. In 1998, the NPIN site was visited 651,016 times.[34]

In October 1997, NPIN proudly sponsored its first conference with the ERIC system, "Families, Technology, and Education." Many of the presenters were fellow clearinghouse staff. The purpose of the conference was explained in the *ERIC Users' Interchange* newsletter:

> The Families, Technology, and Education (FTE) Conference will provide opportunities to reflect on the nature of current and emerging technologies and on the ways they affect family life and the education of children. The impact of the Internet, new telephone technologies, television, and other media will be the focus of the discussions.[35]

The conference was well received. NPIN, like AskERIC, is the recipient of numerous awards including being rated a top family education site by *Family Track*, getting a three-star rating from the *Mental Health Net*, being rated one of the top five Web sites by *Suite 101*, and being featured in *NetTech's* "NeatTech: Best of the Web for Educational Technology."

A 1999 customer survey confirmed users' satisfaction. Eighty-nine percent of those surveyed rated the NPIN materials as "useful." Even more dramatically, 70 percent of respondents felt that the NPIN materials made them "more comfortable in their role as parents."[36]

Web Sites for All

By 1992, all of the ERIC components were hooked up to the Internet via e-mail. In most instances, they were a part of university-affiliated networks. This was the obvious choice for Clearinghouses whose host organizations were universities. Clearinghouses and support contractors that were not affiliated with universities joined networks operated by local universities. For example, The George Washington University, host organization to the Higher Education (HE) Clearinghouse, became the Internet address for the Clearinghouses on Handicapped and Gifted Education (EC) and Teaching and Teacher Education (SP), as well as two of the support contractors, ACCESS ERIC and EDRS. The ERIC Facility was briefly on PSINET before moving to OERI's INET. The Clearinghouse on Languages and Linguistics (FL) utilized Georgetown University, and Oryx Press was a part of Arizona State University's network.

At the time, these affiliations served ERIC well. They enabled the decentralized components to be a part of a cohesive group. More importantly, they greatly opened up the ERIC system to its user audience. Through e-mail, users could informally contact any part of the ERIC system day or night. The popularity of e-mail as the chosen mode for user services increased dramatically since it was first introduced. The following table, adapted from the 1999 Annual Report, demonstrates this trend:[37]

How Users Contacted ERIC in 1998

Method	Number	Percent
E-mail	89,036	49%
Phone	50,729	28%
Letters	34,733	19%
Visits	6,480	4%

With the popularity of the Internet, the clearinghouses and support contractors realized that besides having an Internet address, it would be beneficial for ERIC to be a featured site on the Internet so that users could directly access ERIC services themselves. Initially, this arrangement was facilitated for the clearinghouses by OERI. As Keith Stubbs recalls, "The Department's Internet site hosted some of the ERIC components until they got their own sites."[38]

Having a presence on the Internet was not something originally mandated contractually, but something that the ERIC staff realized was necessary as use of the Internet grew exponentially. As might be expected, the IR Clearinghouse took the lead. In 1992, IR set up the system's first Gopher site. In 1993, the Clearinghouse on Assessment and Evaluation (TM) followed. The 1994 Annual Report viewed these events as major milestones:

> In late 1993, the ERIC Clearinghouse on Assessment and Evaluation followed the lead of the ERIC Clearinghouse on Information & Technology and became the second clearinghouse to establish an Internet Gopher site. By the end of the year, more than 1,500 users were accessing the Clearinghouse's Gopher site weekly. Materials from more than 60 organizations are now posted at this Gopher site. One of the more popular services offered is the Test Locator service.... This Gopher site also features a comprehensive collection of pointers directing users to various locations for searching the ERIC database and ERIC Digests Online.[39]

Soon thereafter, the Science, Mathematics, and Environmental Education (SE) and Reading, English and Communication (CS) Clearinghouses also established Gopher sites. The CS Clearinghouse was especially forward thinking in that it established both a Gopher site and a World Wide Web site for digests and other full-text documents. (N.B. within a few years, except for universities, WWW sites would be the norm on the Internet, supplanting Gopher's early lead.)

It is interesting to note that while ERIC was busy site-building in 1993, this year also marked the introduction of the Internet into the White House, the United Nations, and the World Bank. The Gopher server grew by 997 percent in that year. As amazing as that statistic is, consider the fact that the World Wide Web experienced a 341,634 percent annual growth rate in traffic![40]

By 1994, ten of the clearinghouses (TM, CG, EA, PS, IR, CS, RC, SE, SO, and UD) and four of the adjunct clearinghouses (Art Education, Child Care, Law-Related Education, and U.S.-Japan Studies) had Web sites. By 1996, all of the clearinghouses and support contractors were on the Web. In all, some 23 awards had been bestowed on these Web sites.[41]

Today, as new adjunct and affiliate clearinghouses join the ERIC system, almost as soon as they come on board, they have their own Web site. As technology improves, ERIC components update their sites to make them faster to navigate, more attractive to the eye, and more fun to use. To illustrate, the Urban Education (UD) Clearinghouse made these reported updates to their Web site in 1997:

> Animation has come to the Web site of the ERIC Clearinghouse on Urban Education. First, a schoolhouse on the UEWeb home page lights its windows and swings open its door to greet visitors. Then a cartoon character, D2Urbie, ushers in parent guides in the urban/minority family section.[42]

Most importantly, all of the ERIC Web sites have become increasingly more useful and educational. All include full-text resources, and many, following AskERIC's lead, offer virtual libraries that contain full-text copies of materials both inside and outside the ERIC system. Moreover, some 600 Internet Web sites link back to the main ERIC Web site.

As ERIC has made its noteworthy presence on the Web, staff have reflected on their "adventure" into cyberspace. Here are some of their observations:

> You know, I think that the Internet is like an open door to the ERIC system. We've got to figure out how to really exploit the Internet. Both as an individual clearinghouse and as a system. I think right now we've done a good job modifying existing services on the Internet, but I still think we have a long way to go in terms of how to really exploit the system. *–David Haury, Director, ERIC Clearinghouse for Science, Mathematics, and Environmental Education (SE)*[43]

> Our Internet work is unusual because we were not located at an institution of higher education. This means we had nothing in '92 when Mike [Eisenberg] and Dianne [Rothenberg] and Bob [Stonehill] and others started talking about the Internet and what was coming on it. We had nothing. And we were the first unit at AEL [Appalachian Educational Laboratory] to have e-mail accounts, which we arranged through a local university. We had already developed a lot of the material for a Web site to be operated as an online bulletin board service. So we had an incredible "leg up." We hired some designers and put a lot of resources into developing a decent Web site. *–Craig Howley, former Director, ERIC Clearinghouse on Rural Education and Small Schools (RC)*[44]

> We were the second clearinghouse to do anything significant on the Internet—Syracuse being first. When I saw what Syracuse was doing, I viewed this as an opportunity to establish PR systems at clearinghouses. And many of the clearinghouses have done just that. Usage is phenomenal. *–Larry Rudner, Director, ERIC Clearinghouse on Assessment and Evaluation (TM)*[45]

As may be inferred, Web site development was not taken lightly. ERIC staff put a lot of thought and resources into the development of their Web sites, knowing full well that their home pages would influence how the public perceived them and what they had to offer. The biggest challenges expressed by staff were a lack of inhouse expertise and a limited budget prohibiting hiring the needed staff. David Haury feels strongly on this point:

> I think we're at the point where, to take advantage of the technology and the desire that's being built among users, there's a need for Webmasters and people who have technical capabilities at each clearinghouse. Right now, I think most of the clearinghouses—except for perhaps IR—scrounge around and find people who can do something. But it needs to be somebody who's part of the team, a full-time part of the team.[46]

Nonetheless, many clearinghouse staff feel that Web site development is so important that they offer their assistance to sister organizations, even when they do not have the resources to do so. Jeanne Bleuer of the Counseling and Student Services (CG) Clearinghouse describes director Garry Walz's actions:

> Garry does Web sites for some of our professional associations. They are all linked together and we like to encourage this cross-disciplinary communication. We did a Web site for the National Association of Psychologists. It clicked with our Web site—but it was their Web site. And then we did one for the National Career Development Association and the National Board of Certified Counselors. Now we've got lots of associations coming to us saying, "Will you do our Web site?"[47]

Dianne Rothenberg of the Elementary and Early Childhood Education Clearinghouse (PS) has a similar story to share:

> I feel that this clearinghouse is more influential now than it's ever been in its history. There are several events that fed into that. Because we had [a server] we were out front in early childhood. As a result, we have contact once a month from people asking us to build their Web sites. We really don't want to be a Web site builder, but we are doing that to some extent. If we feel this is a non-profit group that has no other way to get information out there unless we help, we'll help.[48]

Other Internet Forays

From 1992 on, ERIC staff actively sought ways to use the Internet to the system's advantage. As technology changed, ERIC's use of it changed too. Nearly all of the ERIC components brainstormed ways to utilize the Internet to promote user services. Some of the earlier ventures became obsolete as the technology evolved. Yet, even dead-end ventures were learning experiences for newer ones. While there are too many individual efforts to name them all, this section highlights a few of the major practices and products from these times.

Accessing ERIC on the Internet

While the clearinghouses were busy building their Web sites, ACCESS ERIC lost no time in making alliances with commercial online services to get the ERIC system onto the Internet. ACCESS ERIC's strategy was to reach out to as many online services as possible to maximize the program's visibility.

For example, in 1992 ACCESS ERIC obtained agreements with GTE Education Systems and America Tomorrow to host ERIC calendars, brochures, and Digests. A bulletin board hosted by ACCESS ERIC was available via America Online (AOL) by December 1992. The following year, ACCESS ERIC made arrangements with CompuServe and SERVE-Line to carry ERIC materials. In 1994, AskERIC, an AOL bulletin board, became the most frequently accessed ERIC Internet site. By 1995, these online relationships were an ingrained part of ACCESS ERIC's outreach strategy, as this excerpt from the Annual Report underscores:

> ERIC… has a presence on such commercial networks as America Online and CompuServe. The Internet is used by ERIC to disseminate education-related information to users throughout the world, to facilitate discussion groups among members of the education community with common interests, to carry out internal system communications, and to solicit documents and cover electronic journals for the ERIC database.[49]

Given the unpredictability of the fast-growing Internet-related industry, some of these relationships dissolved as online carriers went out of business or changed priorities. For example, in 1997 ACCESS ERIC and AOL severed their relationship, as recorded in the *ERIC Users' Interchange*:

> ACCESS ERIC regrets to announce that America Online (AOL) will no longer offer a direct link to the ERIC Systemwide Web site. As of October 4, 1997, America Online terminated the information provider agreement under which ACCESS ERIC received a royalty compensation (to help pay for the heavy Web site traffic from AOL users) and a special ERIC link on AOL's Web page.
>
> Although AOL is willing to continue pointing to the ERIC Systemwide Web site, they do not see educators as a high priority market at this time, would not compensate ERIC for the additional expenses involved in serving AOL members, and would require that a link to download AOL software be added to the ERIC site.[50]

Nonetheless, in the early years of the Internet, ACCESS ERIC achieved its goal of making the ERIC database widely available to users. Bob Stonehill praises their efforts:

> ACCESS ERIC helped us a lot in moving forward with strategies to open up our access. They were making a lot of connections to the private online vendors—the America Onlines and the CompuServes—and that was really most people's first experience with electronic information access.[51]

However, as Web sites became commonplace, they became users' chief access point to the database as well as to ERIC materials. In 1994, the TM Clearinghouse established a link to the database from their Web page, as this press release indicates:

> Finding and accessing the ERIC database on the Internet is not always as easy as following the instructions on the most recent Internet Access Points to ERIC Networker. The locations offering access to outsiders and the instructions for accessing the locations change often. The ERIC Clearinghouse on Assessment and Evaluation (ERIC/TM) now offers a "Search ERIC" pointer on its Internet Gopher site that automatically leads users to several locations on the Internet that currently offer access to the ERIC database.[52]

Five years later, access to the entire ERIC database and offerings is easily accomplished through the ERIC system home page, the main ACCESS ERIC Web site (http://www.accesseric.org). From here, all of the ERIC component Web sites can be reached. In addition, as noted earlier, more than 600 sites now have links to the ACCESS ERIC site.

As noted in the 1999 ERIC Annual Report, thousands of users log on to ERIC Web sites daily to access resources such as the following:[53]

- Thousands of lesson plans
- A calendar of education-related conferences

- Full-text materials from a variety of organizations for parents
- A test locator database
- Virtual libraries of full-text materials on topics such as school violence and school-to-work transition

Listservs

Since the founding of BITNET in 1981, people with common interests have used the Internet as a forum for discussing views, sharing information, and supporting one another. One of the most powerful innovations associated with the Internet is the listserv. A listserv is an e-mail mailing list that can be associated with any topical information, such as an education newsletter. Listservs can be automatically updated.[54]

The ERIC clearinghouses were natural hosts for education-related listservs, being the depository for subject-specific information about education. By 1994, most clearinghouses were both monitoring and sponsoring unmonitored listservs. The 1994 ERIC Annual Report noted ten listservs in operation.[55]

The popularity of these listservs continued to grow. To illustrate, EA's K12ADMIN listserv expanded from 412 members in 1994 to 863 in 1995. Four other ERIC-sponsored listservs were added that year: SAC (school age child care), PARENTING (addressing parents of children, birth through 18), NTPlan (for state level coordinators implementing technology), and SATL_CON (to complement the Secretary of Education's town meetings).

At the same time the ERIC system was serving the educational community through listserv discussion groups, four listservs were set up to serve the ERIC community:

- ERICDIR: for everyone in the ERIC system

- ERICEXEC: for members of the Executive Committee
- VOCAB-L: for members of the Vocabulary Review Group
- QA_Net: for discussion of issues about the ERIC system

By 1999, the number of listservs sponsored by the ERIC components numbered 80. Some 37,000 participants were active members of these listservs. ERIC listservs of note include the following:

- Big6: focusing on the Big6 Skills Approach to problem solving, sponsored by the Clearinghouse on Information & Technology (IR)
- ITPUBS: focusing on the IR clearinghouse's publications, sponsored by the Clearinghouse on Information & Technology (IR)
- K12ASSESS_L: focusing on assessment in grades K–12, sponsored by the Clearinghouse on Assessment and Evaluation (TM)
- NIFL-ESL: focusing on literacy and policy issues, sponsored by the Adjunct Clearinghouse on ESL Literacy Education (ADJ/LE)
- READPRO: focusing on issues involved in teaching reading, sponsored by the Clearinghouse on Reading, English, and Communication (CS)

One final listserv needs to be mentioned. ERICNews, sponsored by ACCESS ERIC, focuses on the system's initiatives, products, and services. For all of the system's listservs, ERIC maintains the highest standards of "netiquette."

Enter the Internet: Phase II of Technology's Impact on ERIC

The Road to Full Text

Without a doubt, one of the highlights of ERIC's involvement with the Internet was the ability of the system to provide its users with the full text of documents. For many within the system this was the *sine qua non*; full-text delivery was the program's Holy Grail.

Early attempts at full-text delivery such as the Practice File, ERIC Digests Online, and the UMI "Best of ERIC" Pilot Project (see Chapter 4) had demonstrated the desirability of providing full-text documents. By 1992, only the ERIC Digests Online remained an active part of the ERIC system. The popularity of these two-pagers only served to increase the demand for full text. Like many in the system, Dianne Rothenberg viewed full-text development as a requirement for ERIC:

> At every conference we attend, ERIC staff members are asked when—not if—the full texts of ERIC documents will be available in the electronic medium. While librarians are especially interested in online availability, the growing number of ERIC users for electronic full text have led us to the conclusion that the ERIC system must make its document collection available electronically, affordably, and as soon as possible, if it is to remain the premiere international education information system.[56]

When many participants were interviewed for this book, full-text delivery was not yet a reality. For them, it was a key priority:

> The expectations of users have changed with technology. They expect to turn the computer on and get full text. Full text is the big thing. It's the one thing that they're going to be beating on ERIC's door for. –*Wes Budke, formerly of the Adult, Career, and Vocational Education Clearinghouse (CE)*[57]

> ERIC is essentially operating new ideas on old technology. We are a system that has expanded exponentially in its goal and mission, but still, remarkably, it's a very old technology that's being used—microfiche, individual hand-held microfiche. *–Garry Walz, Director, Counseling and Student Services Clearinghouse (CG)*[58]

> I think technology will continue to be a driving force in how we provide services, how we process documents. The one thing we're not doing is providing full-text access online. But it's *got* to happen. It's got to happen. People are not going to use microfiche forever. ERIC was on the cutting edge back then—you know, with microfiche—but it's not so cutting edge anymore. People want to get everything on their computer screen. They're not going to go to the library, let alone go to a microfiche drawer and a microfiche reader. *–Jeanne Rennie, Associate Director, Languages and Linguistics Clearinghouse (FL)*[59]

In 1992—the same year that ERIC made its debut on the Internet—an ERIC Full Text Committee (later known as the Full Text Task Force) was convened to explore possibilities for full-text delivery.[60] Among the approaches the group studied were these:

1) Putting only documents with the 800 or 801 tag in full text on the database (as the reader will remember, these were the codes reserved for documents considered to be the "Best of ERIC." See Chapter 4.)
2) Making the 800 and 801 documents available in ASCII text (i.e., text that is unformatted, but easily transmitted to varying platforms)
3) Requesting that authors' documents conform to guidelines that would reduce storage needs
4) Requesting that clearinghouses prepare machine-readable text for a full-text collection locally

5) Scanning documents into the database
6) Leaving the task of providing full-text document delivery to commercial vendors

In regard to the first option, storage costs were thought to be prohibitive. Authors had problems with the second option, fearing that their work would be easily "pirated" if available in the unformatted ASCII style. When the TM and CE clearinghouses piloted the third option, and in response to detailed guidelines received only one document in the requested format, that idea was abandoned. The fourth approach was likewise dismissed as there were not sufficient funds to purchase standardized hardware and software packaged for the clearinghouses, all of which, at that time, had unique platforms. Moreover, this approach would have required hiring additional staff.

The fifth and sixth solutions offered more promise. Here is how the Task Force summarized the situation:

> In 1994, Bob Stonehill and Mike Eisenberg met at Syracuse University with the Northeast Parallel Architecture Center (NPAC) to discuss options for scanning documents to create a full-text collection. Personnel at the Center advised them that the declining cost of computer storage had made the storage issue "no problem." The Executive Committee urged that plans to scan and store as individual page images all ERIC documents for which permission could be obtained… should proceed on a pilot basis. The NPAC Center was and still is willing to experiment with this project, although they recommend that the ERIC system itself should eventually host the full-text collection for systematic control.[61]

Despite having tabled the idea, no one in the ERIC system abandoned the idea. Nearly everyone thought, as Jeanne Rennie said earlier, that "It's got to happen." Waiting, though, was difficult for those who felt the need was immediate. This e-mail message sent by Mike Eisenberg of the IR Clearinghouse through the ERICDIR listserv caused quite a commotion at the time:

> I just want to be on record that in my opinion the number one issue facing the entire ERIC system is full text. Every place I go, I am asked about this. Every day, AskERIC gets multiple questions about this. When we first started talking about it, full text on the Net (or CD-ROM) was unique and we would have been ahead of the curve. Now we are behind—big time. With all due respect to EDRS, I hang my head and lower my voice when I must admit that we are still microfiche-based.[62]

In the wake of the storm created by Eisenberg's e-mail, Barak Stussman at ACCESS ERIC sent this internal memorandum of response:

> I suspect that the reason that Pete's group [EDRS] has not swung into full gear on this is that he does not believe that people will PAY for images (.pdf or .txt) files of ED documents.
>
> I have had one or two conversations with Don Frank [of EDRS] and he has said that people balk when they raise the price of the microfiche or paper copy of a document by a couple of cents. I read in *American Libraries* a couple months ago about the digital program at the Library of Congress and the person from the Library of Congress estimated that it cost something like $6.50 to scan a page of a document. If the market (the people calling EDRS) will not bear the price of getting the electronic full text, do we, or the taxpayer, want to fund this endeavor? The information is there but just not in the most convenient form.
>
> Carol [Boston of ACCESS ERIC] brought up a good point when Mike said, "Now we are behind—big time," by asking "What other databases are full text?" Just to check it out I called NLM [The National Library of Medicine, sponsor of MEDLINE] and asked a reference librarian, "Is the MEDLINE database full text?" The librarian said, "No, and there are not plans to make it full text."[63]

EDRS's Response

The challenge to produce full text fell firmly on EDRS's shoulders. As the Full Text Task Force had noted, "EDRS [was] the ERIC component with the most at stake in how the electronic full text issue is resolved."[64] EDRS did not take this responsibility lightly. As much as users and colleagues in the ERIC system clamored for full text, EDRS itself was determined to make this a reality. The road to full text was a winding one, stretching from 1995 to 1999.

At the same time that the clearinghouses were building Web sites, EDRS was as well. In mid-1995, EDRS established a Web site that allowed users to search the ERIC database (ED's only), order paper copy and microfiche documents online, and access topical bibliographies and other information of interest to ERIC users. As Nancy Cawley, EDRS's marketing director noted, "This was our first step into the world of high technology."

Also in 1995, Pete Dagutis, a member of the Full Text Task Force, prepared a position paper on the issues involved in offering full text commercially. In that paper, Dagutis compared three methods for obtaining full text:[65]

1) Scanning from the original source documents
2) Scanning from microfiche
3) Receiving the document from the originator in both electronic and paper form

Dagutis eliminated the third alternative for the reasons the full Task Force mentioned earlier. The method preferred by Dagutis was a combination of options 1 and 2. As he wrote in his paper, "It appears that a combination of scanning from microfiche and paper would make the most sense for the ERIC system and would provide the flexibility to convert the current documents, but also the older documents in the database."[66]

At the start of 1996, the quest for full text became not just an item on everyone's wish list, but a part of EDRS's official mandate. When DynCorp won the recompete for the EDRS contract in December 1995, the contract called for continuing all existing services—including delivery of ERIC microfiche collections and on-demand documents on microfiche and paper—*plus* new requirements for capturing, storing, and disseminating ERIC documents electronically.

Given this mandate, EDRS began building the infrastructure for electronic document delivery in 1996. This included:

- Expanding the office and upgrading office systems, including modernizing customer ordering, accounting, and billing services
- Installing and configuring microfiche scanners, document fax-back systems, file servers, and high capacity optical storage devices
- Re-engineering business processes to integrate the new work functions, including microfiche scanning and document quality control activities
- Developing a Web-based online access system prototype for user exploration and testing

With this infrastructure in place, EDRS "initiated an information technology revolution that [would] forever change the ways that users obtain documents from ERIC. This revolution began in 1996, when cutting edge technologies were implemented to digitize, store, and deliver ERIC documents."[67] Features of this "technology revolution" included:

Enter the Internet:
Phase II of Technology's Impact on ERIC

- Document scanning from microfiche to digital imaging for all documents, beginning with the January 1996 issue of *Resources in Education*
- Image storage in an ERIC digital document archive
- New document delivery options, including online dissemination
- New ERIC information products, including document collections on CD-ROM
- Faster turnaround for on-demand orders (both paper and electronic copy)
- Full online access to EDRS through the Web, with seamless access to the ERIC database
- Security for online credit card transactions

In early 1997, EDRS tested the prototype model for document delivery that it had been working on throughout 1996. EDRS gave users an opportunity to download more than 100 sample ERIC documents associated with three topical bibliographies from the EDRS Web site free-of-charge. As noted, this was "a highly anticipated milestone in ERIC history."[68]

At the June 1997 annual conference of the American Library Association (ALA), EDRS introduced an enhanced prototype that was based on the "lessons learned" from the roll-out of the Web-based on-demand service. Nancy Cawley recalls this debut with excitement: "This introduction to our future online service received a very positive response. Everyone who stopped by our booth at ALA was ecstatic about ERIC full-text delivery."

Full-scale development of full text began in August 1997. By December, EDRS unveiled to the public its electronic store of document images available for order on a per-document, on-demand basis. The introduction of on-demand electronic document delivery laid the foundation for development of electronic subscription service for libraries.

In October 1998, EDRS prepared a Beta test of existing functions for libraries interested in serving as system evaluators for the electronic document subscription service. The test was designed to determine the efficacy of the preliminary design in "real world" conditions. Participants were able to access the preliminary system, search the entire ERIC document database, and download for free full-text images of selected documents issued in 1997 and 1998. Formative evaluation in the form of user feedback was fed into the design process. Over 100 institutions participated in the three month Beta test, providing comments on system performance, features, and flow.

March 29, 1999, was a special date in ERIC history. On that day, EDRS inaugurated electronic subscription service for libraries. Known as E*Subscribe, this service made the full-text concept an everyday part of ERIC for libraries, as announced by the following flyer: [69]

Enter the Internet:
Phase II of Technology's Impact on ERIC

LIVE! ERIC Subscriptions Online

Is your user community demanding Instant Access?

The ERIC Document Reproduction Service (EDRS) announces E*Subscribe, an online subscription service for research libraries, schools, and other institutions. E*Subscribe provides unlimited access to most ERIC documents from 1996 to the present (the remainder are restricted by contributors to microfiche release). Choose one of three packaging options designed to suit your budget and needs. Each package includes:

Access for 3 simultaneous users, with the option to obtain additional access

A choice of access via user name and password, domain name or IP address

The entire database of ERIC documents, 1996 to the present, searchable via Express search or Full Search

ERIC Documents in Adobe PDF available for downloading

Access to the EDRS electronic store, to order documents not available electronically

To obtain a subscription information kit, check the EDRS Web site, or call or email Customer Service.

By the end of June 1999, E*Subscribe had more than 60 customers, with each day bringing additional interested users. While demand was highest among academic libraries, school and public libraries signed up as well.

EDRS's Response

As this history of ERIC draws to a close, Nancy Cawley of EDRS summarizes the current status of full-text delivery:[70]

> Despite the fact that this is a new service, we continue to enhance, improve, and expand the service for our customers:
>
> - New equipment and software is on order and will increase information storage capacity, access speed, and load capacity for Web-based access to our service.
> - Once the new equipment is installed and configured, EDRS will reindex our version of the ERIC database and offer users more searchable fields and a greater number of display fields of the ERIC citation. EDRS will also provide ERIC Journal (EJ) citations as well as EDs to provide our customers with a one-stop research and information retrieval tool.
> - EDRS is negotiating with ERIC database vendors to provide links from these products to the full-text document images in the electronic document archive. We currently have links established with SilverPlatter and with OVID, and are talking with OCLC, EBSCO, and others.
> - In the future, EDRS hopes to be able to link ERIC users to journal article providers to obtain the full-text of ERIC journal literature, as well as ERIC documents.

Achieving full-text delivery is an achievement for the entire system, as Richard Whalen, EDRS's program monitor comments:

> EDRS has faced difficult challenges in creating ERIC's digital database. Although the use of scanning technology and digital archiving has become more commonplace, it is still relatively new. The company deserves special commendation for applying these techniques, largely at their own risk, to the ERIC database. As a pioneer in this field, EDRS has brought many benefits to the system. Not only has electronic delivery of full-text documents become a reality, but issues of database management, storage, and retrieval for the new millennium have been addressed and resolved.[71]

Enter the Internet:
Phase II of Technology's Impact on ERIC

Full-text delivery is a fitting milestone with which to end the historical part of this book. When ERIC began in 1966, it was on the cutting edge of technology with its advanced micrographics. Thirty-three years later, with its full-text electronic delivery service on the Internet, ERIC is again representative of state-of-the-art technology.

We close this chapter on ERIC and the Internet with these words of appreciation from a practitioner user:[7]

> Dear ERIC,
>
> You are why I became computer literate. When I discovered that I could access educational research myself via computer and modem, I decided that being computer literate was something important to me. Thanks and keep up the good work!
>
> Dennis Dawson, Principal
> Buri Buri Elementary School
> South San Francisco, CA

Chapter 6

ERIC in the 21st Century

ERIC is not only NOT resistant to change, it has a history of change. It is this continual evolution that challenges and motivates many ERIC oldtimers.

–Lynn Barnett,
Congressional Oversight Hearing, 1987

We recognize that the common theme for the networked world of today and tomorrow is everlasting change. The existing ERIC system will need to embrace and promote a cycle of research, evaluation, and change in its services for educators to sustain its effectiveness and efficiency.

–"Rising Expectations: A Framework
for ERIC's Future in the National Library
of Education, 1998"

In ending a chronicle such as this, it is accepted practice to gaze into the crystal ball that is the future and predict what lies ahead. This exercise is not so much an adventure in second guessing as it is an attempt to make sense out of history. On the portal to the National Archives in Washington, DC, are engraved these words: "The past is prologue." We study the past to guide us in the future. It is hoped, therefore, that the lessons learned in this segment of the ERIC story will enlighten future decisions.

In the interviews conducted for this book, all participants were asked to reflect on where they thought ERIC would—and should—be headed in the future. Their opinions readily fell into five interrelated categories, each of which is briefly touched on in this chapter:

1) The continuing impact of technology
2) The inclusion of electronic and other nonprint documents into the database

3) Extending ERIC outward to other systems and audiences
4) Dealing with an inadequate budget
5) Maintaining balance and quality

Technology's Continuing Impact

As noted in Chapters 4 and 5, technology has single-handedly revolutionized every aspect of the ERIC system. In the coming years, its hold on the system is not expected to diminish. Staff expect to see even more of a dependence on Web-based technology—plus directions that are now only in the dream stage. The challenge confronting the system continues to be, as Mike Eisenberg has already been quoted as saying, "to try to capitalize on the new technologies, almost to anticipate the new technologies, and certainly at least to keep pace with them."

The following insights from ERIC staff pose some thought-provoking directions for ERIC's future with respect to technology:

> I think that ERIC's future is obviously going to be tied into more interactivity with computers. That is, the idea of presenting people with quality information that you know the history of. We at ERIC have taken this responsibility very seriously. In the future, we will take it in an even more serious vein. *–Jane Henson, Co-Director, Clearinghouse for Social Studies/Social Science Education (SO)*[1]

> Technology allows us today to do something that 10 years ago I would have fought against, screaming and hollering, and kicking my feet. That is, to bypass the human element in producing abstracts and indexing of these materials. It is no longer that essential to have human beings do that work, especially when there is such effective vocabulary control. *–Phyllis Steckler, President, Oryx Press*[2]

> I'd like to see ERIC developing new databases, such as one on teacher-produced materials. ERIC has missed the golden opportunity to put a lasso around teaching development materials. More and more teachers are getting on the Internet,

developing instructional packages. Syracuse [i.e., the IR Clearinghouse] has a bunch of lesson plans up. There's another site that's got 500 fully-packaged units up. But there could be a whole lot more. Here's an opportunity to develop an ERIC database that's really meaningful to teachers. Teachers would post materials along with their e-mail addresses. They could get little groups together to refine those units, sharing. We could be coordinating this mass teacher-sharing effort.

If I were the [Department of Education] I would be thinking about mandating that every clearinghouse develop a "pathfinder" in their field, establishing their clearinghouse as THE clearinghouse. So the clearinghouse on reading, for example, would not just post all of the good material that they've done, but have scoured the Internet for everything there is on reading. They could devote a quarter percent time of somebody to developing a Web page just on reading. I think the Department of Education ought to demand it. They could do it in the next RFP. *–Larry Rudner, Director, Clearinghouse on Assessment and Evaluation (TM)*[3]

There is a certain willingness to realize that the ERIC of the future is probably going to be different than the ERIC of the past, both in terms of the users and what the technology will allow, and what our role will be because of the change in technology. Somehow we're going to have to figure out what it means to be ERIC in an electronic age when people communicate on the Internet through electronic means. They don't put their ideas in a journal. By the time it reaches a journal, it's "old hat." So what's the role for ERIC in all of this if you have to wait for it to come out on paper before you abstract it?

I think what the Eisenhower National Clearinghouse is doing is pointing us more towards where the ERIC system might want to go. Eisenhower has a much stronger reliance on electronic services as opposed to archival material. The one thing that Eisenhower does much more than we do is they spend much more time physically bringing people into contact with materials. The response is incredible. *–David Haury, Director,*

> *Clearinghouse for Science, Mathematics, and Environmental Education (SE)*[4]
>
> I think [ERIC's future] is going to go a couple of ways. I think it's going to reach out to more people beyond what was initially the kind of professional educator community. We're going to be a prominent player in creating the nexus nerve center for the flow of all kinds of educational information. And again, the Internet is going to be the tool for that. *–Erwin Flaxman, Director, Clearinghouse on Urban Education (UD)*[5]
>
> With the Internet, the database is becoming too vast. We have to be able to package and repackage the database to make it user friendly and accessible. [At the same time] we have to take care not to overpackage it, so that the database can still be useful to the serious researcher. *–Lynn Smarte, Director of ACCESS ERIC*[6]
>
> I have felt personally a need to push us to be on the leading edge, to really be ahead of the curve. This afternoon at the ERIC Director's meeting, David Lankes [of the IR clearinghouse] is going to show some of the latest ideas we are working on in order to be where we believe ERIC needs to be. Even the World Wide Web as we know it is a very interim step to a different type of information system. *–Mike Eisenberg, former director, Clearinghouse on Information & Technology (IR)*[7]

In 1998, the ERIC system as a whole took a look at where ERIC is headed in the next century. A task force, headed by Craig Howley, then Director of the Clearinghouse on Rural Education and Small Schools (RC), produced a blueprint of their vision for ERIC's growth. In the task force's final report, "Rising Expectations: A Framework for ERIC's Future in the National Library of Education," the following technology-related expectations were set forth. Not surprisingly, they reflect the views documented above:[8]

- Provide easy and convenient delivery of full-text documents now available only on microfiche

- Provide or negotiate delivery of full-text education-related journal articles
- Provide an evolving organizational schema for, and descriptions of, constantly changing Web sites that are related to education or are useful to educators

Each of these ideas, according to the task force, is within ERIC's capabilities, given the availability of appropriate resources.

Extending the Database Electronically and to Nonprint Media

As noted above, one of the outcomes of electronic technology has been the proliferation of material created on the Internet for immediate dissemination. Also in recent years, there has been a move to include more nonprint media in the ERIC database—including videotapes, multimedia packages, computer diskettes, CD-ROMs, laserdiscs, and the like. The Operations Framework Task Force confirmed this trend, noting that in the future, ERIC ought to "provide more varied products (in multiple formats) that synthesize, interpret, and otherwise add value to existing resources."[9]

While there have been some attempts to address these issues, it has been left to future decision makers to resolve them. The following citations illustrate ERIC staff's initial thoughts on this subject:

> I think ERIC will have to address some unique problems—problems surrounding the document collection as authors and publishers move away from the traditional printed document to one published and available only in electronic format. How should the current system adapt to that change? *–Pete Dagutis, Director, EDRS*[10]
>
> Anyone could go onto the Internet and download the database and make it available themselves. They could take the

database, segment it, and take some of our materials, and mix it with some of their materials.

I think all of those materials will get mixed together. When teachers want information on a subject, they'll want it from every different source. *–Phyllis Steckler, President, Oryx Press*[11]

I would like to see a real hard look at how ERIC is going to deal with things that are solely in electronic form. Electronic journals and things that are in cyberspace and exist only in cyberspace, not in any printed form at all. I think ERIC needs to decide how it's going to address those materials. Because right now, there is an incompatibility. ERIC is designed to be a paper handling system and you need to take pictures and put documents on microfilm. This is in conflict with the fact that there is more and more material that is available only in electronic form.

What does ERIC do with electronic-only material? It really hasn't devised a hard policy. The last guidance was that if it was in electronic-only form, to print it out because we need something to film.... We found in too many cases when you go to an electronic address that is cited for something, that it's not there anymore. We are very reluctant to cite as the only availability of something an electronic address. We need some proof that that electronic address is going to be around for a while—that it has some stability. If users go there and they can't find the address or the document, then you haven't done them a favor. What good is that? They would start calling you names if you put in the database things they can't find anywhere. "This is perfect, this is just what I want, but the address isn't good anymore so how... do I get it?" You can't do that or your name will be mud after awhile. That's unacceptable and I don't think ERIC wants to get caught in that trap. *–Ted Brandhorst, Director, ERIC Processing and Reference Facility*[12]

I think we do need to consider expanding to cover other types of materials. In the NLE [National Library of Education] Advisory Task Force report there was some discussion of

> that—of covering multimedia materials and covering curriculum materials.
>
> And what about the materials on the Internet? What about the archival aspect of the Internet? That's problematic. If you want to serve users at the moment, you don't worry too much about vocabulary consistency. But if you're performing an archival service, you do.
>
> On the Internet, the whole idea of capturing things versus pointing to them is a big problem. Here today, gone tomorrow. Versions can change overnight. It's not like publications, where once you've got them in your grasp, you've got it. And what version do you capture? What's the authoritative version? *–Keith Stubbs, Director of ERIC*[13]

Extending ERIC Outward

As ERIC approaches the next century and millennium, it, like the rest of the country, is cognizant of its role in the global community. Heretofore, ERIC has been rather insular in its approach. As a system, its decentralized parts tend to keep to themselves. As an entity, ERIC has had only minimal collaboration with other database systems. And, while there has been a growing trend toward internationalism (See Chapter 3), this movement has for many critics been neither bold enough nor fast enough. In the citations that follow, ERIC staff make a consistent plea for this type of outreach in the future:

> The government should be providing coordination and guidance. All of the ERIC Internet activities could be done off of the OERI computer—everybody telnetting in and setting up accounts that would have a permanent address. That would establish a permanent identity and a common technology base so that systems can help each other on technical issues. Sixteen clearinghouses now have sixteen different approaches to using the Internet. They are not learning from each other; there is very little sharing. There should be a lot more coordination. *–Larry Rudner, Director, Clearinghouse on Assessment and Evaluation (TM)*[14]

ERIC has been somewhat inbred and has not gone out there and mixed with its colleagues, the National Agricultural Library, the National Library of Medicine, NTIS, the Library of Congress, and all the other national information systems that are in this city. They should be rubbing shoulders every week of the month. And that they really haven't done.

There are mechanisms in this city for these people to take advantage of what each group is doing and to do a lot of crossover. And I fault ERIC for that. I fault myself for not having done it more. But work has intervened. It has been difficult to do that. The ERIC Program Office needed to do more of that than they have done. *–Ted Brandhorst, Director, ERIC Processing and Reference Facility*[15]

Among the things that intrigue me are the global aspects of ERIC. And I think that those are heightened with technology. I think that most of us think of ERIC as a domestic system used by citizens of the United States. But that's really not true anymore. And so I'm wondering, "What are the global implications? What are the global collaborations?" I know there's International ERIC. Which is what? Canada, Australia, Britain. But are there others? Do we need to be thinking not just domestically now? Do we need to be thinking much more globally in how we construct the database and how we market the database? If we're serious about being a global marketplace or a global community, what does that mean for ERIC? It's something we need to get thinking about. *–Blane Dessy, Director, National Library of Education*[16]

ERIC's original and continuing mission to collect, index/abstract, disseminate fugitive educational information may no longer be an appropriate government function; this mission should be re-examined in light of the new information culture and role of the private sector in building and promoting information channels. Many potential ERIC documents (print and nonprint) are being placed directly on the Internet and are organized and better promoted by private information vendors or directly by end users; the costly indexing/abstracting process is no longer necessary. The taxpayer costs for building and promoting the database may not be justified given the plethora of educational information resources available in today's

> electronic environment. *–Pat Coulter, former director of ERIC*[17]
>
> The future of ERIC? I'd like to see it on my desktop. It's the talking, illustrated ERIC. An electronic librarian. A little "ERIC The Intelligent Agent" that lives in the corner of your computer.
>
> Diane Ravitch had the SMARTLINE concept. You ask a question and it parses out what you are asking and it figures out what the real inquiry is and runs off and gets the information and synthesizes it, gives you back an answer. That didn't make sense 10 years ago, 5 years ago. But it's increasingly beginning to make sense. ERIC, I think, in the future is going to be a system where an inquiry results in a response that is not ERIC-specific anymore. The ERIC database's boundaries will start to vanish and will start merging with the Labs' information, and with the Research Centers, and NCES [The National Center for Education Statistics], and the organizations that are out there, and the State Agencies, and the Chiefs. A user may not even know what the source of the response to their inquiry was.
>
> So, "ERIC Without Walls" I think is the next step. And I think there is already some play around the system—working with ERIC, working with the Labs, and working with the regional technology consortia. The Eisenhower National Clearinghouse is a big player here. There needs to be cross-site indexing of educational resources so that an inquiry will bring back relevant documents and also bring back lab sites and resources and R&D. That's where I think we are going—completely seamless, shared information. *–Bob Stonehill, former director of ERIC*[18]

Dealing With an Inadequate Budget

Throughout this book, a common thread has been ERIC's budget, which for many years actually diminished over time in real dollars. The Operations Framework Task Force summarized the problem in this way:

> It is important to note that, at the same time that ERIC has worked to meet the challenges of the information age, the resources under which ERIC has operated have declined. One way to view this is in constant 1997 dollars, which provide a historical basis for comparison of resources from the perspective of the present. The peak year for ERIC dollars was 1969, when ERIC was funded at approximately $19.5 million (in constant 1997 dollars); today ERIC operates at just 21 percent of that level.[19]

In comparison with other systems and government-sponsored organizations, ERIC's budget is paltry. David Haury, who is director of the ERIC Clearinghouse on Science, Mathematics, and Environmental Education (SE), as well as co-director of the Eisenhower Clearinghouse on Math and Science, notes that the Eisenhower Clearinghouse has a budget almost the size of all the ERIC clearinghouses put together. As Haury observes:

> We sometimes find it ironic that we [the SE Clearinghouse] are sitting in the same building and they [the Eisenhower Clearinghouse] have this whiz-bang show that they can take throughout the land. We're sitting over here with access to tons more material, but we don't have the same presence. We don't have the same presentation. We don't have the same immediacy they do. So we think there's got to be a middle ground somewhere.[20]

Like coupon-clipping shoppers, ERIC administrators and contractors have become wise consumers. They look for ways to economize while still maintaining the highest standards of quality. For the 20 years chronicled by this book, this practice has resulted in both great creativity and great frustration. For some in ERIC, the situation has reached crisis proportions; they are ready to rebel.

Dealing With an Inadequate Budget

For many of those interviewed, finding a way to increase the budget must be a key ingredient in future planning if ERIC is to survive. Here is what staff have to say:

> One of the big trends in ERIC in the past 15 years has been the reduction in the number of personnel who have oversight over ERIC. In the 80's we had a lot more Program Office money to spend. It's the downsizing—with no hiring after people leave.... Having more and more assignments along with monitoring duties scares people. How can you do 15 things and do them competently?
>
> We have one monitor who works in the Library as a full-time statistician. We have one monitor who is a program policy and planning person. We have one who does online searching and gets requests from the public and from people within the Department.
>
> You want to do your best at everything you do, but some things you have to put aside, which, I think, is somewhat unfair. I set my own priorities because I'm only one person, as are Bob [Thomas], Kevin [Arundel], as well as Richard [Whalen], or any of the folks here. And it's unfortunate. The downsizing has made us become many things—and not be able to concentrate on our main duties. *–Joan Trumble, ERIC Program Monitor*[21]
>
> Back in 1985 when I first came here, ERIC was at that time on a par with the National Library—as a separate entity. It was still out front. I mean, it was not buried like it is now. The ERIC Program existed as a separate office. Of course, now it's just a team without any visible recognition. *–Steve Balkcom, former ERIC Monitor*[22]
>
> If we had doubled our budget as a system, that would be some achievement. But we really haven't. We've made some inroads, but we really haven't grown as we should have. And I'm not really sure why. It's just maybe the nature of the Department of Education and education funding in this country. We really should be a $20–25 million program and we're not. And so I consider that one of our failures. We

haven't grown in the way we've needed to grow. *–Mike Eisenberg, former director, Clearinghouse on Information & Technology (IR)*[23]

I wish we could have more money. I wish we had as much money as IR got for updated technology. We got new computers two years ago that were state-of-the-art. Then we added memory. Now they need a constant infusion of money just to keep up with the technology. *–Susan Imel, Director, Clearinghouse on Adult, Career, and Vocational Education (CE)*[24]

I tell the story about when I was sitting in my office in the '60s and I got a call from the ERIC system monitor and he says, "We're sitting here in a staff meeting." Based on your annual review, you used to go in and present what you were doing for a day and they'd ask questions and learn about the system and what you were doing, and you'd learn more about ERIC. And he called and he said, "Based on what we've learned, we'd like to give you $10,000 more!" And I'm not quoting that to say that this is as a result of any particularly meritorious action on my part. It was an expression of the fact that in the early days, there seemed to be the money and the resources to do what you wanted to do.

That is not true today. The prevailing trend is that expectations have risen far more rapidly than the availability of funds to support them, the Web site being perhaps the best example of that. The clearinghouses are doing that out of their own hide, their own blood. And you'll hear that, if not publicly, then privately. Everybody's so excited and willing to stretch, but the system is losing its elasticity.... You just can't keep going on and adding new things. For years, we've had straight line budgets. There was not even inflation built in. We need to find the funds to do what we need and wish to do. *–Garry Walz, Director, Clearinghouse on Counseling and Student Services (CG)*[25]

My big problem at the moment is the budget. We've got all these opportunities in front of us. Which way do we go? So I'm having an advisory board meeting. They are going to determine my future. Where do we put our energies? Do we establish

> ourselves as a clearinghouse via the Internet? Do we do more outreach? Get the chance to put assessment information into the hands of teachers? What is the mix? And then we move accordingly. *–Larry Rudner, Director, Clearinghouse on Assessment and Evaluation (TM)*[26]

> I think—we hope—ERIC will continue to grow. We're certainly requesting increased budgets for ERIC every time we get the opportunity to do that. So we are hoping that we will be better able to support the ERIC system financially. *–Blane Dessy, Director, National Library of Education*[27]

It should be noted that, as this book goes to press, there is some encouraging news on the budget front. As of December 1999, ERIC again has a full-time director—Luna Levinson, from OERI's National Institute on Student Achievement, Curriculum, and Assessment. Also, an additional three members soon will be added to ERIC's program office staff.

Maintaining Balance and Quality

Like Ted Brandhorst, who has reiterated the seriousness with which he takes his job as the custodian of the database, many in the ERIC system worry about quality. With limited budgets, it is not uncommon to feel, as some staff have remarked throughout this book, that quality does not always receive its due respect. The Operations Framework Task Force focused on this as a major theme:

> We believe that ERIC's utility and high level of service to education, a result of both dedication and innovation, are in jeopardy. ERIC has come a long way from a "dusty old database" and sets of microfiche in the basements of university libraries. Today, ERIC is working to set standards in information service, support professional development of teachers and administrators, provide information for parents on the difficult tasks of bringing up and educating their children, and help build the education infrastructure of tomorrow. However, ERIC is finding its ability to meet those new demands seriously impaired by limited resources and an aging operations framework.[28]

Others in ERIC worry that with all of the emphasis on technology other priorities are being abandoned. The following ERIC staff members express their desire that quality always remain in the forefront of future decision making:

> I'm in favor of providing electronic information, [but] I would hate to see ERIC not provide book information and pamphlets and brochures, and all of the things that ERIC has been known for providing in the past.... I would hate to have them say: "Well everything's electronic now, let's not bother with publications." *–Ellie MacFarlane, Publications Specialist, Clearinghouse on Reading, English, and Communication (CS)*[29]

> The technology is just the means to an end. It's not the end. It's just another form of the paperback/hardback debate. It's just another way of presenting material. Somebody still has to be producing material, whether you're going to be distributing it in book form or electronic form. One shouldn't become confused by that and throw all the resources into pure technology, or it becomes a façade—with nothing behind it. *–Steve Stroup, Assistant Director, Clearinghouse on Reading, English, and Communication (CS)*[30]

> Firm fixed price contracting: I think has caused major changes. I wonder if a person looked at quality control right now as compared to 5 or 10 years ago, would we find quality being maintained at the same level? When your funding really depends on the exact number of something you put in, I think the impulse is to lower quality. I don't have any empirical data on that and I don't want to say that I know that's the case. Certainly the Grants and Contracts Office would argue, "Well you have all these quality controls...." But, I think it's human nature to think about it a little differently. I do think also in many ways it reduces our flexibility, at least in theory. It makes for a less forgiving system. *–Dianne Rothenberg, Associate Director, Clearinghouse on Elementary and Early Childhood Education (PS)*[31]

> ERIC has to maintain its integrity as to what it is and not go chasing "every little rabbit that runs across the trail." It's still a

> bibliographic control system. It's a language monitor. It's a document evaluator. And that latter—the evaluation or screening of documents—is more important now than it ever was. As I've said before, anybody has the capacity to churn up anything. And they do. And without a monitor to sort out what's up there, I think we'll lean toward some kind of chaotic cacophony. *–Art Cohen, Director, Clearinghouse for Community Colleges (JC)*[32]

The answer to many of the questions posed in this concluding chapter will come about only with a thorough, objective review and analysis of the program. The Cost and Usage Study[33]conducted in 1981 was the last major evaluation study of ERIC. Lynn Smarte, director of ACCESS ERIC, states why she feels there is a dire need for a new evaluative study:

> ERIC is always at risk of being underappreciated by the policymakers and those who make the funding decisions when we have no recent evaluation of ERIC to show who's using it and how they're using it—to show the impact of ERIC. We have lots of anecdotal information, including hundreds of testimonials that were sent to ERIC components a few years ago when our constituents felt that ERIC was threatened. And, of course, the clearinghouses have files full of "thank you" correspondence and impressive statistics on the numbers of publications distributed and the numbers of user requests.
>
> We know that half our requests come from teachers, but you can always find teachers who've never heard of ERIC. We know that our ERIC-produced Digests and major publications are high quality and objective sources of information on current education issues, but there is understandable criticism that we don't get new material into the database fast enough. We need a serious, well-funded, objective study of ERIC in order to know what we're doing right and what we must do better in order to meet the needs for education information.[34]

It is noteworthy that at the end of 1999, plans for another major evaluation of ERIC are firmly underway in the ERIC Program

Office. This effort is spearheaded by Bob Thomas, long-time ERIC Program Monitor.

As this volume draws to a close, ERIC's future is both bright and challenging. The lessons of history related in this volume will serve as beacons to future decision makers. The lure of technology and all that it offers should not diminish the high standards upon which ERIC's reputation has been so firmly built.

We conclude this book of reminiscences with the final reflections of Garry Walz, who has been with ERIC since its very beginning days—at this point in time, some 33 years:

> This is the last thing that I have to say. What ERIC demonstrates is essentially the power of an idea or concept more than anything else. This was an idea that was generated by a relatively minor person at the Department. Even I don't know his name. He said, "You know, maybe we should have an information system for education like some of the physical sciences." And he wrote a proposal and submitted it. And the higher-ups said, "That doesn't sound like a bad idea and they're not asking for very much money." So the people who were making decisions decided to move on it and they brought in somebody who was in that field, which happened to be Lee Burchinal, who had made a name for himself in information dissemination outside of education.... There were also some others.
>
> And over the years—30 some years—ERIC has been underfinanced. It's almost never referred to in the report on the *Condition of Education* or by the Secretary of Education. But here it is 30 years later and it has outsurvived most all other programs. Programs that were funded with infinitely more money—none of them have persisted like ERIC has. ERIC is now having an impact on schools, homes, and families. It is now a system used around the world—and the most frequently used thing for these schools and colleges. Why? It goes back to the power of an idea and this innate desire that everybody has to become better than they are: to work, to improve what they know, what they can do through learning. What a wonderful, satisfying thing to be associated with.[35]

Appendix A

Interview Questions for ERIC Staff

1) What do you see as the major trends in ERIC over the past 15 years?

2) Who and what do you see as the driving forces behind ERIC (now and in the past)?

3) What do you consider to be the major achievements of ERIC since 1980?

4) With hindsight, what events/directions/decisions in ERIC's history do you think were especially "on target?" Were there other events/directions/decisions that you think should never have taken place?

5) What do you consider to be the major achievements of your Clearinghouse (or organization) since 1980?

6) How (if at all) has the philosophy/mission of your Clearinghouse (or organization) changed over time?

7) How do you think "politics" has influenced the mission/agenda of ERIC as a whole and your Clearinghouse (or organization) in particular?

8) How have the "hot topics" your Clearinghouse (or organization) addresses changed over time?

9) What do you anticipate will be the "hot topics" your Clearinghouse (or organization) will be dealing with over the next 15 years?

10) Where do you see ERIC headed in the future? Is this the same direction you personally would like to see ERIC headed in? (If not, please explain...)
11) What other information do you think it would be important for us to include in this history?

If you have any documents/products/reports that you think would add to our understanding of ERIC or the role your Clearinghouse (or organization) has played during the last 15 years, we would be most appreciative if we could review this material.

Appendix B

List of Interviewees

ERIC Program Office Interviews

Interviewee	Title	Years at ERIC
Kevin Arundel	Monitor	1966-present
Steve Balkcom	Former Monitor	1985-1995
Lee Burchinal	Former OE Assistant Commissioner	1965-1973
Bob Chesley	Former Director	1978-1982
Pat Coulter	Former Monitor	1967-1995
	Former Director	1995-1996
Blane Dessy	Director, National Library of Education	1994-present
Chuck Hoover	Former Director	1970-1978; 1982-1985
Dorothy Myers	Former Monitor	1985-1994
Bob Stonehill	Former Director	1987-1994
Keith Stubbs	Director	1994-present
Bob Thomas	Monitor	1987-present
Joan Trumble	Monitor	1992-present
Richard Whalen	Monitor	1996-present

Support Contractor Interviews

Interviewee/ Organization	Title	Years with ERIC
Ted Brandhorst ERIC Processing and Reference Facility (AA)	Director	1970-present
Jim Houston ERIC Processing and Reference Facility (AA)	Lexicographer	1966-1970; 1973-present
Phyllis Steckler Oryx Press	President	1979-present
Lynn Smarte Access ERIC (AE)	Director	1993-present
Beverly Swanson Access ERIC (AE)	Former Director	1990-1992
Belinda Taheri Access ERIC (AE)	Associate Director	1990-present
Carol Boston Access ERIC (AE)	Dissemination Coordinator	1990-present
Peter Dagutis ERIC Document Reproduction Service (EDRS)	Director	1991-present

Appendix B

Clearinghouse Interviews

Clearinghouse	Prefix	Interviewee(s)
Adult, Career, and Vocational Education	CE	Susan Imel (with Sandra Kerka Judy Wagner, Julie Miller, and Wes Budke)
Assessment and Evaluation	TM	Larry Rudner
Community Colleges	JC	Art Cohen
Counseling and Student Services	CG	Garry Walz and Jeanne Bleuer
Disabilities and Gifted Education	EC	Kathleen McLane and Janet Drill
Educational Management	EA	Not interviewed
Elementary and Early Childhood Education	PS	(A) Lilian Katz (B) Dianne Rothenberg
Higher Education	HE	(A) Jonathan Fife (B) Lynn Barnett (former Asst. Dir.)
Information & Technology	IR	Mike Eisenberg
Languages and Linguistics	FL	Jeanne Rennie
Reading, English, and Communication	CS	Ellie MacFarlane and Steve Stroup
Rural Education and Small Schools	RC	Craig Howley
Science, Mathematics, and Environmental Education	SE	David Haury and Linda Milbourne
Social Studies/Social Science Education	SO	(A) Jane Henson (B) John Patrick
Teaching and Teacher Education	SP	Judy Beck (with Dorothy Stewart, Joost Yff, Ann Marie Harnett, and Ismat Abdal-Haqq)
Urban Education	UD	Erwin Flaxman

Adjunct Clearinghouse Interview

Adjunct Clearinghouse	Reports To	Interviewee
Art Education	SO	Gilbert Clark

Appendix C

The ERIC Program Office

Directors of Central ERIC (CERIC)

Parent Agency	Director
Office of Education (OE) 1965-1970	Harold Haswell (1965-1966)
	Harvey Marron (1966-1970)
National Institute of Education (NIE) 1970-1986	Chuck Hoover (1970-1978)
	Bob Chesley (1978-1982)
	Chuck Hoover (1982-1985)
Office of Educational Research and Improvement (OERI), U.S. Department of Education 1986-1996	Alan Moorehead (1985-1987)
	Bob Stonehill (1988-1994)
	Pat Coulter (1995-1996)
National Library of Education (NLE), U.S. Department of Education 1996-Present	Keith Stubbs (1996-1999)
	Luna Levinson (1999-present)

Appendix D

The ERIC Clearinghouses, Adjunct Clearinghouses, and Affiliate Clearinghouse

ERIC Clearinghouses

Clearinghouse	History	Affiliation	Directors
Adult, Career, and Vocational Education (CE)[2]	Began as two clearinghouses: Vocational and Technical Education (VT, est. 1966), and Adult and Continuing Education (AC, est. 1967); in 1973 both were merged into CE, which was originally known as Career Education	VT: Ohio State University (1966–1973) AC: Syracuse University (1967–1973) CE: Northern Illinois University (1973–1975)	Robert Taylor (1966–1970) Joel Magisos (1970–1973) Roger DeCrow (1967–1972) Stanley Grabowski (1973) David Tiedeman (1973–1975)
		Ohio State University (1976–present)	Marla Peterson (1976–1979) Juliet Miller (1980–1987) Susan Imel (1987-present)

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[2] The prefixes provide historical clues to the evolution of the clearinghouses. For example, the Clearinghouse on Adult, Career, and Vocational Education is known as CE. This prefix makes more sense knowing that this clearinghouse was once known as the Clearinghouse on Career Education.

Appendix D

Clearinghouse	History	Affiliation	Directors
Assessment and Evaluation (TM)	Began as Tests, Measurement, and Evaluation (1970)	Educational Testing Service (1970–1987)	Henry S. Dyer (1970–1972) S. Donald Melville (1972–87) Gary Echternacht (1987)
		American Institutes for Research (1988–1992) Catholic University (1993–1998) University of Maryland (1999–present)	Lawrence Rudner (1988–present)
Community Colleges (JC)	Began as Junior Colleges (1966)	University of California at Los Angeles	Arthur M. Cohen (1966–present)
Counseling and Student Services (CG)	Began as Counseling and Guidance (1966), also called Counseling and Personnel Services	University of Michigan (1966–1992) University of North Carolina at Greensboro (1993–present)	Garry R. Walz (1966–present)
Disabilities and Gifted Education (EC)	Established as Exceptional Children (1966); also called Handicapped and Gifted Children	Council for Exceptional Children (CEC) (1966–present)	June Jordan (1966–1969) Paul Ackerman (1969–1970) Donald Erickson (1970–1990) Frederick Weintraub (1990–1992)

Clearinghouse	History	Affiliation	Directors
Disabilities and Gifted Education (EC) (continued)			Bruce Ramirez (1993–1994) Sheila Mingo (1994–1995) Bruce Ramirez (1995–1999) Cassandra Peters-Johnson (1999–present)
Educational Management (EA)	Began as Educational Administration (1966); in 1970, merged with Educational Facilities (EF, est. 1967)	EF: University of Wisconsin (1967–1970)	John Yurkovich (1967–1968) Howard Wakefield (1969–1970)
		EA: University of Oregon (1966–present)	Ione F. Pierron (1966–1967) Philip K. Piele (Acting) (1967) Terry Eidell (1968–1969) Philip K. Piele (1969–present)
Elementary and Early Childhood Education (PS)	Established as Pre-School Education (1967)	University of Illinois (1967–present)	Brian W. Carss (1967–1970) Lilian G. Katz (1970–present)
Higher Education (HE)	Always known as Higher Education (est. 1968)	The George Washington University (1968–present)	Lloyd Elliott (1968–1969) Carl Lange (1969–1974) Peter Muirhead (1974–1977) Jonathan Fife (1977–1998) Adrianna Kezar (1998–present)

Appendix D

Clearinghouse	History	Affiliation	Directors
Information & Technology (IR)	Educational Media and Technology (EM, est. in 1967) merged with Library and Information Science (LI, est. in 1967) in 1973; name changed to Information Resources (IR)	EM: Stanford University (1967-1973)	William Schramm (1967-1968) William Paisley (1969-1970) Donald Coombs (1971-1972) Richard Clark (1973-1973)
		LI: University of Minnesota (1967-1970)	Wesley Simonton (1967-1970)
		American Society for Information Science (1970-1973)	Herbert Koller (1970-1973)
		IR: Stanford University (1973-1977)	Richard Clark (1974-1974) Lewis Mayhew (1974-1977)
		Syracuse University (1977-present)	Donald Ely (1977-1990) Michael Eisenberg (1990-1998) David Lankes (1998-present)
Languages and Linguistics (FL)	In 1971, Teaching of Foreign Languages (FL, est. 1966) merged with Applied Linguistics and Uncommonly Taught Languages (AL, est. 1966)	AL: Center for Applied Linguistics (1966-1971)	A. Hood Roberts (1966-1971)
		FL: Modern Language Association (MLA) (1966-1974)	Kenneth Mildenberger (1966-1970) Warren Born (1971-1974)

Clearinghouse	History	Affiliation	Directors
Languages and Linguistics (FL) (continued)		FL: Center for Applied Linguistics (1974–present)	A. Hood Roberts (1974–1978) Peter Eddy (1978–1980) John Clark (1981–1986) Charles Stansfield (1986–1994) Joy Peyton (1995–present)
Reading, English, and Communication (CS)	In 1972, Reading (RE, est. 1966); and Teaching of English (TE, est. 1967) merged to form Reading and Communication Skills (CS)	RE: Indiana University (1966–1972)	Edward G. Summers (1966–1968) Leo Fay (1968–1969) James Laffey (1969–1972)
		TE: National Council of Teachers of English (NCTE) (1967–1972)	Bernard O'Donnell (1967–1972)
		CS: National Council of Teachers of English (NCTE) (1972–1987) Indiana University (1988–present)	Bernard O'Donnell (1972–1983) Charles Suhor (1984–1987) Carl B. Smith (1988–present)
Rural Education and Small Schools (RC)	Began as Small Schools and Rural Compensatory Education (1966)	New Mexico State University (1966–1987)	Alfred M. Potts (1966–1968) Darrell Willey (1968) Everett Eddington (1968–1984) Jack Cole (1984–1986)

Appendix D

Clearinghouse	History	Affiliation	Directors
Rural Education and Small Schools (RC) (continued)		Appalachia Educational Laboratory (1988-present)	Betty Rose Rios (1986-1987) C. Todd Strohmenger (1988-1989) Strohmenger and Howley (1990-1992) Craig Howley (1993-1997) Hobart Harmon (1997-1998) Timothy Collins (1998-present)
Science, Mathematics, and Environmental Education (SE)	Began as Science Education (1966)	Ohio State University (1966-present)	John S. Richardson (1966-1968) Robert Howe (1968-1990) Patricia Blosser (Acting) (1990-1991) David Haury (1991-present)
Social Studies/ Social Science Education (SO)	Began as Social Science Education (1970)	Social Science Education Consortium, Inc. (1970-1985) Indiana University (1985-present)	Nicholas Helburn (1970-1975) Irving Morrissett (1975-1985) John Patrick (1985-present)
Teaching and Teacher Education (SP)	Began as Preparation of Urban School Personnel (1966)	City University of New York (1966-1968)	Leonard J. West (1966-1968)

Clearinghouse	History	Affiliation	Directors
Teaching and Teacher Education (SP) (continued)		American Association of Colleges for Teacher Education (1968-present)	Joel L. Burdin (1968-1974) Joost Yff (1974-1976) Karl Massanari (1976-1981) Joost Yff (1981-1983) Michael Butler (Acting) (1983) Elizabeth Ashborn (1983-1987) Mary Dilworth (1987-present)
Urban Education (UD)	Began as Disadvantaged Children and Youth (1966); name changed to Clearinghouse on the Disadvantaged (1968), later to Urban Education	Yeshiva University (1966-1968) Teachers College, Columbia University (1968-present)	Edmund W. Gordon (1966-1968) Doxey A. Wilkerson (1968) Edmund W. Gordon (1968-1979) Erwin Flaxman (1979-present)

Adjunct Clearinghouses

Adjunct Clearinghouse	Prefix	Reports To	Current or Last Director	Established
Art Education	ADJ/AR	SO	Gilbert Clark	1989[3]
Child Care	ADJ/CC	PS	Anne Goldstein	1995
Clinical Schools	ADJ/CL	SP	Ismat Abdal-Haqq	1994
Compensatory Education (Chapter1)	ADJ/ Chapter 1	UD	Mary Quilling	1989[4]

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[3] Defunct as of 1997.

Appendix D

Adjunct Clearinghouse	Prefix	Reports To	Current or Last Director	Established
Consumer Education	ADJ/CN	CE	Gwen Reichbach	1991
Educational Opportunity (TRIO)	TRIO	HE	Andrea Reeve	1998
Entrepreneurship Education	ADJ/EE	JC	Arthur Cohen	1996
ESL Literacy Education; began as	ADJ/LE	FL	Joy Peyton	1992
Literacy Education for LEP Adults			Marilyn Gillespie	1989
International Civic Education	ADJ/CV	SO	John Patrick	1997
Law-Related Education	ADJ/LR	SO	John Patrick	1994[5]
Postsecondary Education and the Internet	ADJ/PE	HE	John Milam	1999
School Counseling Services	ADJ/SC	CG	Doris Rhey Coy and Michael Altekruse	1998
Service Learning	ADJ/SL	SO	Rob Shumer	1996
Test Collection	ADJ/TC	TM	Janet Williams	1994
US-Japan Studies	ADJ/JS	SO	C. Frederick Risinger	1989

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[4] Defunct as of 1994.

[5] Terminated in December 1999.

Affiliated Clearinghouse

Affiliated Clearinghouse	Prefix	Host Institution	Established	Director
National Clearinghouse on Educational Facilities	NCEF	National Institute of Building Sciences	1998	William A. Brenner

Appendix E

The ERIC Facility

Contractors and Directors of the Facility

Contract	Affiliation	Director
ERIC Processing and Reference Facility Prefix: AA	North American Aviation (1966–1968)	Joseph Ebersole (1966–1968)
	North American Rockwell (1969)	Richard McCord (1969)
	Documentation, Inc. Leasco, Inc. Operations Research, Inc. (ORI) ARC Professional Services Group Computer Sciences Corporation (CSC) (1970–present)	Wesley (Ted) Brandhorst (1970–present)

Appendix F

ERIC Document Reproduction Service

Contractors and Directors of EDRS

Contract	Affiliation	Director
ERIC Document Reproduction Service Prefix: EDRS	Bell & Howell, Inc. (1965-1967)	L. Block (1965-1967)
	National Cash Register (NCR) (1968-1971)	Charles Koppa (1968-1971) Jim Brown (1971)
	Leasco Information Products (LIPCO) (1971-1974)	James Jaffe (1971-1972) Carl Koch (1972-1974)
	Computer Microfilm International (CMIC) (1974-1990)	Charles Sauer (1974-1975) Jack Veale (1976-1982) Tom Glacken (1982) Victor Fortin (1983-1990)
	CBIS Federal, Inc. (1991)	John Gracza (1991)
	DynCorp/DynEDRS, Inc. (1992-present)	Peter Dagutis (1992-present)

Appendix G

ACCESS ERIC

Contract	Affiliation	Director
ACCESS ERIC Prefix: AE	Aspen Systems, Inc. (1989-present)	Samuel Fustukjian (1989-1990) Beverly Swanson (1990-1992) Lynn Smarte (1993-present)

Appendix H

Developmental Milestones in ERIC's History

1961[6]	The acronym ERIC is coined at OE to stand for Educational Research Information Center
1964 (May)	ERIC created as a branch in the Division of Educational Research
1965 (November)	ERIC Document Reproduction Service (EDRS) created
1966 (March)	Two prototype clearinghouses established: Vocational and Technical Education, Preparation of Urban School Personnel
1966 (May)	ERIC Processing and Reference Facility created
1966 (June)	"Birth" of ERIC: full implementation
1966 (June)	Ten additional clearinghouses established: Educational Administration, Small Schools and Rural Compensatory Education, Junior Colleges, Counseling and Guidance, Science Education, Reading, Disadvantaged Children and Youth, Teaching of Foreign Languages, Applied Linguistics and Uncommonly Taught Languages, and Exceptional Children

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[6] Dates are provided as specifically as they could be determined.

Appendix H

1966 (June)	Thesaurus of ERIC Descriptors, Phase I published
1966 (October)	Clearinghouses assigned two-letter alphabetical symbols as identifiers
1966 (November)	First Issue of *Research in Education* (RIE) published
1967 (June)	Six additional clearinghouses funded for total of 18: Teaching of English, Library and Information Science, Educational Media and Technology, Educational Facilities, Early Childhood Education, and Adult and Continuing Education
1967 (July)	ERIC changes its name (but not its acronym) to Educational Resources Information Center
1968 (June)	Focus of Clearinghouse on Preparation of Urban School Personnel changed to Teacher Education
1968 (September)	Clearinghouse on Disadvantaged Children and Youth changed name to Clearinghouse on the Disadvantaged; later to Urban Education
1969 (January)	Journal literature added to ERIC database; publication date of first issue of *Current Index to Journals in Education* (CIJE)
1970 (June)	Clearinghouse for Educational Facilities closed out; function added to responsibility of Educational Management; name changed to Clearinghouse on Educational Management to reflect new scope; Clearinghouses on Social Science Education and Tests, Measurement, and Evaluation established
1970	First ERIC Database Users Conference held
1971	ERIC database offered online by Lockheed (Dialog)

1972	Clearinghouses on Reading and Teaching of English combined to form Reading and Communication Skills
1972 (August)	ERIC transferred to newly created National Institute of Education (NIE)
1972	RAND report on ERIC's structure and organization released
1972	*ERIC Users' Interchange* newsletter begun
1973	Clearinghouses on Library and Information Sciences and Educational Media and Technology merged; name changed to Information Resources to reflect new scope
1973	Clearinghouses on Adult and Continuing Education and Vocational and Technical Education merged to form the Clearinghouse on Career Education
1974	100,000th entry made to ERIC database
1974	RIE now stands for Resources in Education
1975	ERIC transferred to newly created National Institute of Education
1976	ERIC receives award for "Outstanding Contributions to Micrographics"
1977 (Summer)	Vocabulary Improvement Program initiated as part of major Thesaurus revision
1977	ERIC Technical Steering Committee formed
1980 (May)	NIE (with ERIC) transferred from Department of Health, Education, and Welfare (DHEW) to newly formed Department of Education

Appendix H

1980	Major (8th) Thesaurus revision completed
1981	Cost and Usage Study of ERIC system produced
1983	Practice File Project conducted
1983	500,000th entry to database
1984	All clearinghouses send direct online transmission of bibliographic data to Facility
1985	ERIC database available on CD-ROM
1985	ERIC transferred to NIE’s successor, the Office of Educational Research and Improvement (OERI)
1986 (April)	ERIC Redesign Study launched
1988	ERIC Digests Online prepared by PS Clearinghouse
1989	First budget increase in a decade ($5.7 million to $6.5 million)
1989	ERIC Partnerships established
1989	Adjunct Clearinghouses established
1989 (May)	ACCESS ERIC established
1989	Compact ERIC project begun to feature “best of” ERIC documents on CD-ROM
1990	Full text of ERIC Digests offered online
1990	*ERIC Review* inaugurated
1991	EDRS offers 24-hour ordering service by mail, telephone, or fax

1992	ERIC makes its debut on the Internet
1992	AskERIC founded by Information Resources (IR) Clearinghouse as human-mediated interactive question-and-answer service on the Internet
1992	ERIC funds other related special projects, including Gateway to Educational Materials (GEM) and Virtual Reference Desk
1993	Books added to the database
1993	NPIN (National Parent information Network) established for parents on the Internet by the Clearinghouse on Elementary and Early Childhood Education (PS) and the Clearinghouse on Urban Education (UD)
1993	Toll-free 800 numbers established for all ERIC components
1995	ERIC transfers to National Library of Education (NLE)
1997	EDRS initiates full-text electronic delivery of documents entered in database since 1993
1998 (September)	First Affiliated Clearinghouse (Educational Facilities, EF) established
1999 (March)	EDRS opens new electronic document subscription service for libraries, E*Subscribe
1999 (September)	ERIC database reaches 1 million entries

Notes

Chapter 1

1. The millionth record milestone was reached in September 1999.

2. Over time there have been 23 different subject-specific clearinghouses. The greatest number of extant clearinghouses at one time has been 20 (in 1972). Although the names still occasionally change to reflect emergent priorities, the number of clearinghouses has stabilized at 16.

3. Processing is defined as cataloguing, indexing, abstracting, data entry, and preparing for filming, according to Ted Brandhorst in "Distributing the ERIC Database on SilverPlatter Compact Disc – A Brief Case History," November 5, 1986.

4. The World Wide Web, a facility of the Internet.

5. The prefixes (viz., IR) are two-letter symbols used as a shortcut reference for the ERIC clearinghouses. See Appendix D for a full listing.

6. "ERIC Annual Report – 1998," p. 19.

7. Ted Brandhorst, "Distributing the ERIC Database on SilverPlatter Compact Disc – A Brief Case History," November 5, 1986, p. 7.

8. "ERIC Annual Report – 1999."

9. Charles Hoover and Ted Brandhorst, "Development and Current Status of the Educational Resources Information Center (ERIC): A Model Bibliographic Control System Covering the

Literature of Education in the United States." Paper presented at the International Meeting on Educational Documentation: Present and Future, Florence, Italy, May 31–June 4, 1982, p. 2.

10. Delmer J. Trester, *ERIC—The First Fifteen Years*, Columbus, OH:SMEAC Information Reference Center, 1981, p. 13.

11. Planning Program Statement, "The Educational Research Information Center," n.d.

12. The ERIC system, or the organizational construct within the U.S. Department of Education (then U.S. Department of Health, Education, and Welfare) for disseminating education information.

13. Speech presented at the ERIC Directors' Meeting, September 26, 1996.

14. Speech presented at the ERIC Directors' Meeting, September 26, 1996.

15. Originally called satellite centers, the field centers soon became more popularly referred to as clearinghouses.

16. Personal interview with Ted Brandhorst, May 2, 1996.

17. Personal interview with Kathleen McLane, July 18, 1996.

18. Personal interview with Jeanne Bleuer, September 24, 1996.

19. "ERIC Annual Report – 1998," 26.

20. Personal interview with Lilian Katz, June 20, 1996.

21. Personal interview with Phyllis Steckler, October 9, 1996.

22. Delmer J. Trester, *ERIC—The First Fifteen Years*, Columbus, OH:SMEAC Information Reference Center, 1981, p. 114.

Chapter 1

23. Personal interview with Jonathan Fife, July 18, 1996.

24. Personal interview with Peter Dagutis, October 20, 1997.

25. The ERIC Program Office funds a half-time CIJE editor at the Facility. The remainder of CIJE costs are assumed by Oryx Press.

26. Personal interview with Ted Brandhorst, May 2, 1996.

27. Personal interview with Phyllis Steckler, October 9, 1996.

28. "ERIC Annual Report – 1996," p. 21.

29. Personal Interview with Ellie MacFarlane, May 13, 1996.

30. Personal interview with Garry Walz, September 25, 1996.

31. R.M. Stonehill and T. Brandhorst, "The Three Phases of ERIC," *Educational Researcher*, April 1992, p. 1.

32. Kevin Arundel reports that the legality of copyrighting the database was approved by the Education Department's General Counsel and Contracts Offices.

33. Personal Interview with Bob Stonehill, April 16, 1997.

34. Lee Burchinal memorandum dated September 23, 1965.

35. Personal interview with Ted Brandhorst, May 2, 1996.

36. Ibid.

37. Personal interview with Jim Houston, September 26, 1996.

38. Personal interview with Ted Brandhorst, May 2, 1996.

39. American National Standards Institute, now called the National Information Standards Organization.

40. Personal interview with Jim Houston, September 26, 1996.

41. Personal interview with Ted Brandhorst, May 2, 1996.

42. "ERIC Annual Report – 1995," p. 5.

43. Personal interview with Blane Dessy, July 7, 1997.

44. Personal interview with Jane Henson, May 13, 1996.

45. Personal interview with Ted Brandhorst, May 2, 1996.

46. Letter from Bob Chesley to Nancy Cawley and Laura Colker, August 21, 1999.

Chapter 2

1. Letter from Bob Chelsey to Nancy Cawley and Laura Colker, August 21, 1999.

2. Joel L. Heinmiller, "ERIC Cost and Usage Study: A Descriptive Summary," December 1981.

3. The study was conducted by King Research, Inc., of Rockville, Maryland.

4. Testimony of Chester Finn, Jr., before the Subcommittee on Select Education of the Committee on Education and Labor, U.S. House of Representatives, July 30, 1987.

5. Defined in the King Report as an information service-providing organization that offers clients ERIC information by

maintaining one or more of the following: RIE, CIJE, ERIC searches, and ERIC documents.

6. Researchers estimated that an hour of ERIC usage costs $12.90, of which NIE contributed $0.53, the access points contributed $2.50, and the user contributed $9.87.

7. Personal interview with Kevin Arundel, June 13, 1997.

8. Personal interview with Jeanne Rennie, September 10, 1996.

9. A Preliminary Concept Paper: Review of the ERIC System—1985, pp. 1-2.

10. This group, appointed by Dr. Laurabeth Hicks, the Associate Director, Program on Dissemination and Improvement of Practice, was composed of the following members: John Egermeier-Chair (Associate Director Research and Educational Practice); Charles Hoover (Associate Director, Information Services and Head of ERIC program); Conrad Katzenmeyer (Senior Associate, Testing, Assessment, and Evaluation Program); Gail MacColl (Senior Research Associate, Program on Education Policy and Practice); David Mack (Associate Director, Regional Programs); and Hunter Moorman (Planning Officer, Office of the Director).

11. "Initial Report and Recommendations on Design of ERIC Program Review," February 1, 1985, p. 2.

12. Gail MacColl, Conrad Katzenmeyer, Molly MacAdams, James McGeever, and John Egermeier, "Final Report. Staff Review of ERIC Issues—1985," pp. 18-19.

13. Ibid., p. iii.

14. Letter from Bob Chesley to Nancy Cawley and Laura Colker August 21, 1999.

15. In 1986, COED included the following members: Garry Walz (CG), Charles Suhor (CS), Philip Piele (EA), Donald Erickson (EC), Charles Stansfield (FL), Jonathan Fife (HE), Donald Ely (IR), Arthur Cohen (JC), Lilian Katz (PS), Betty Rose Rios (RC), Robert Howe (SE), John Patrick (SO), Elizabeth Ashburn (SP), Donald Melville (TM), Erwin Flaxman (UD), and Juliet Miller (CE).

16. Memorandum from Jeanne Rennie to Bob Tate, n.d.

17. Panel members were: Jim Bencivenga, Director Information Services, OERI; Tom Duncan, Office of the Governor, Jefferson, City, MO; Steve Frankel, Montgomery County (Maryland) Public Schools; Anne Mathews, OERI Library Programs; Larry Rudner, OERI Senior Associate (later to become Director of the Assessment and Evaluation Clearinghouse (TM)); Tommy Tomlinson, OERI Senior Associate; John Collins, Librarian, Graduate School of Education, Harvard University; Don Erickson, Director, ERIC Clearinghouse on Handicapped and Gifted Children (EC); Debra Gerald, OERI Mathematical Statistician; Richard Lodish, Principal, Sidwell Friends School; Dale Rice, *Dallas Times Herald*; Bruno Manno, OERI Director of Planning; and David Plank, University of Pittsburgh.

18. Testimony of Donald K. Erickson before the U.S. House of Representatives Subcommittee on Select Education, July 30, 1987, pp. 1-2.

19. Personal interview with Larry Rudner, September 4, 1996.

20. Letter from Lynn Barnett to ERIC technical staff, July 31, 1997.

21. The areas under consideration were: technology, effectiveness of dissemination, and quality control.

Chapter 2

22. Letter of April 21, 1986. Parsons was an education writer, formerly for *The Christian Science Monitor*.

23. James W. Guthrie and Trish Stoddart, "Redesigning ERIC: A Modern Information System for Practicing Educators," paper commissioned by the U.S. Department of Education, May 1986, p. 15.

24. Ibid., p. 21.

25. Memorandum from Jeanne Rennie to Bob Tate, n.d.

26. Clarence M. Cawley, "Final Report of ERIC Redesign Study Panel Meeting," June 20, 1986, p. i.

27. Ibid., p. 24.

28. Members included Tommy Tomlinson, Richard Lodish, Dale Rice, and Tom Duncan.

29. Summary of the work of the ERIC redesign study panel's sub-group on dissemination.

30. Ibid.

31. John W. Collins III, "Current and Future Technological Requirements of the ERIC System," Commissioned by the U.S. Department of Education, June 1986, p. 5.

32. Members included Ann Mathews, John Collins, Steven Frankel, and Don Erickson.

33. Summary Report on Technology, Summer 1986.

34. Members included Debra Gerald, Larry Rudner, Bruno Manno, and David Plank.

Notes

35. Summary Report on Quality, Summer 1986, p. 1.

36. Ibid., pp. 3-4.

37. David N. Plank, "Issues in the Redesign of the ERIC System: Content and Quality Control," University of Pittsburgh, June 1986, p. 2.

38. Ibid., p. 19.

39. The term Secretariat was later changed to ACCESS ERIC.

40. Memorandum from Jeanne Rennie to Bob Tate, n.d.

41. Memorandum from Jonathan D. Fife to ERIC Clearinghouse Directors, September 26, 1986.

42. "Four-Point Plan For ERIC Redesign," Council of ERIC Directors, September 23, 1986.

43. A statement prepared by the Council of ERIC Directors, September 1986.

44. Council of ERIC Directors, "Guiding Principles for ERIC Design," September 1986, pp. 2-7.

45. Ibid., p. 2.

46. Reauthorization of OERI in September 1986 included a "hold harmless" provision for ERIC for FY '87 and beyond, and stated that the "maintenance of effort provisions… refer to both the number of grants and the budget levels committed to OERI programs by categories listed in statute."

47. Letter from Leon E. Panetta, Augustus R. Hawkins, William F. Goodling, Jim Wright, and William D. Ford to Chester E. Finn, Jr., September 26, 1986.

48. Jim Bencivenga, "ERIC in Its Third Decade," was released to the public on December 8, 1986.

49. Jim Bencivenga, "ERIC in Its Third Decade," December 8, 1986, p. 1.

50. Ibid., p. 4.

51. Ibid., p. 5.

52. Ibid.

53. Jim Bencivenga, "ERIC in Its Third Decade," Executive Summary, December 8, 1986, p. 2.

54. *Education Daily*, December 11, 1986, p. 2.

55. Bencivenga, op. cit., p. 2.

56. Jim Bencivenga, "ERIC in Its Third Decade," December 8, 1986, p. 12.

57. Lynn Smarte, memorandum to Ted Brandhorst, "ERIC Chronology of Major Events (1960–1993)," February 6, 1996.

58. To gain perspective on this figure, the "ERIC Annual Report – 1987" notes that there were 270,000 total documents in the system that year.

59. Letter from Charles W. Stansfield and Jeanne L. Rennie to Jim Bencivenga, January 16, 1987.

60. Letter from Bob Chesley to Nancy Cawley and Laura Colker, August 21, 1999.

Notes

61. Jim Bencivenga, "Domains or Scope Areas to be Included in the ERIC System (Provisional – December 1986)," December 22, 1986, p. 1.

62. Personal interview with Dianne Rothenberg, May 15, 1996.

63. James J. Bencivenga, "ERIC Redesign," papers issued for public comment, 1986–1987 (ED 278 429).

64. Testimony of Donald K. Erickson July 30, 1987, p. 1.

65. Letter from Charles W. Stansfield and Jeanne L. Rennie to Elizabeth Payer, OERI, April 30, 1987.

66. Letter from Don Ely to Elizabeth Payer, April 1987.

67. *Education Daily*, Wednesday, April 1, 1987.

68. Personal interview with Bob Stonehill, April 16, 1997.

69. Personal interview with Dorothy Myers, July 11, 1997.

70. Personal interview with Garry Walz, September 24, 1996.

71. Memorandum from Don Ely to all ERIC Directors, February 2, 1987.

72. Personal interview with Dianne Rothenberg, May 15, 1996.

73. Personal interview with Jeanne Bleuer, September 24, 1996.

74. Summary and Response to Comments on the ERIC Redesign Proposal, n.d.

75. "Meeting with staff of the House Select Education Subcommittee," July 17, 1987.

76. Hearing before the Subcommittee on Select Education of the Committee on Education and Labor, House of Representatives, One Hundredth Congress, first session. Hearing held in Washington, D.C., July 30, 1987, p. 1.

77. Chester (Checker) E. Finn, Jr., Assistant Secretary for Educational Research and Improvement, U.S. Department of Education; Sharon K. Horn, Acting Director of Education Library Division; Edwin S. Darrell, Director of Information Services.

78. Donald P. Ely, Director, ERIC Clearinghouse on Information Resources; Don Erickson, Director, ERIC Clearinghouse on Handicapped and Gifted Children; Lynn Barnett, Associate Director, ERIC Clearinghouse on Higher Education.

79. Leslie Bjorncrantz, Curriculum Librarian and Education Bibliographer, Northwestern University; Natalie Felsher, Reading Specialist, Montgomery County [Maryland] Public Schools; Kenneth S. Tollett, Distinguished Professor of Higher Education, Graduate School of Arts and Sciences, Howard University; Charles W. Hoover, former Director, ERIC, and former Associate Director for Information Resources, National Institute for Education.

80. Letter from Lynn Barnett to ERIC technical staff, July 31, 1987.

81. Robert M. Stonehill, Preface, "Annual Report – 1987," p. i.

82. Personal interview with Dianne Rothenberg, May 15, 1996.

83. Section 405 (G) (l) (c) of the Higher Education Technical Amendments Act of 1987.

84. Personal interview with Garry Walz, September 24, 1996.

85. Personal interview with Ted Brandhorst, May 2, 1996.

86. Letter from Bob Chesley to Nancy Cawley and Laura Colker, August 21, 1999.

87. Telephone interview with Chuck Hoover, May 27, 1997.

88. Memorandum from Jeanne Rennie to Bob Tate, n.d.

89. Hearing before the Subcommittee on Select Education of the Committee on Education and Labor, House of Representatives, One Hundredth Congress, first session. Hearing held in Washington, D.C., July 30, 1987, pp. 109-110.

90. Testimony of Jonathan D. Fife before the House Labor and Education Committee, May 4, 1988, p. 9.

91. Ted Brandhorst, ERIC Processing and Reference Facility, Rockville, Maryland. "What Are the Possibilities for Coordinating Education Information Databases?" Revised version. Paper presented at the Annual Meeting of the American Educational Research Association (San Francisco, California, March 29, 1989).

92. ERIC Facts for ERIC Subscribers, January 1989.

93. May 4, 1988, and May 4, 1989.

94. Testimony of Jonathan D. Fife before the House Labor and Education Committee, May 4, 1989, pp. 8-9.

95. Budget data are provided in each of the annual reports, starting in 1986, with the exception of the years 1993, 1994, and 1995.

96. Personal interview with Art Cohen, January 3, 1997.

Chapter 3

1. As specified by the 1963 President's Science Advisory Committee and cited by Lawrence Rudner in Testimony for the National Library of Education Task Force, n.d.

2. Personal interview with Blane Dessy, July 7, 1997.

3. Personal interview with Ted Brandhorst, May 2, 1996.

4. Charles Hoover and Ted Brandhorst, "Development and Current Status of the Educational Resources Information Center (ERIC). A Model Bibliographic Control System Covering the Literature of Education in the United States." Paper presented at the International Meeting on Educational Documentation: Present and Future, Florence, Italy, May 31–June 4, 1982, p. 3.

5. About 500 books were added to the database in the inaugural year of 1993. Books were assigned the publication type code 010.

6. "ERIC Annual Report – 1994," p. 27.

7. Robert M. Stonehill and Ted Brandhorst, "The Three Phases of ERIC," Educational Researcher, April 1992, p. 21.

8. Memorandum from Craig Howley, November 11, 1991.

9. Virginia Seiser, "ERIC through the ages: Searching for information about specific age groups in the ERIC database," *Database*, August 1987, p. 75.

10. ERIC/CRESS Position Statement on the Concept of Educational Relevance of RIE Documents, September 26, 1991.

11. Memorandun from Ted Brandhorst to Todd Strohmenger and Craig Howley (RC) re ERIC Selection Criteria, October 3, 1991.

12. The titles cited were: An Analysis of the Recent Surge in Consumer Debt in Rural Areas; Aspects of Farm Finances: Distribution of Income, Family Income, and Direct Payments, 1986; Better Times in Alaska; Community Impacts of Technological Change; The Declining Wages of Young Adult Men in Non-metropolitan U.S.; Farmland Retention in the Southeast; Nonfarm Employment of Farm Operators, Hired Farmworkers, and Unpaid Farmworkers; Rural Development Issues in Georgia; Rural-Urban Continuum Codes for Metro and Nonmetro Counties; The Small Farmer Sector in Uruguay; and Wood Residues as an Energy Source.

13. Memorandum from Ted Brandhorst to ERIC Directors re ERIC Selection Criteria, October 3, 1991.

14. Memorandum from Mike Eisenberg to ERIC Directors, October 28, 1991.

15. Telephone interview with Craig Howley, July 22, 1997.

16. Robert M. Stonehill, "Myths and Realities About ERIC," June 1992.

17. Lawrence Rudner, Testimony for the National Library of Education Task Force, n.d.

18. Personal interview with Phyllis Steckler, October 9, 1996.

19. As specified by the 1963 President's Science Advisory Committee and cited by Lawrence Rudner in Testimony for the National Library of Education Task Force, n.d.

20. Personal interview with Kevin Arundel, August 13, 1997.

21. Hoover provided insight into the derivation of this rallying cry in testimony before the Subcommittee on Select Education of the Committee on Education and Labor, July 30, 1987:

"Approximately nine years ago [in 1976], Dr. Ronald Havelock reviewed 43 studies of the ERIC system. The major conclusion that Havelock reached in his analysis was that ERIC's major system problems were awareness and access. I am sure if you talk to one of the supervisors that I had in my last six or seven years as Head of ERIC, he will emphasize that I continually harped on the theme of awareness and access. I practically begged for funds to address these issues."

22. Delmer J. Trester, ERIC—The First Fifteen Years, Columbus, OH:SMEAC Information Reference Center, 1981, p. 321.

23. Personal interview with Bob Thomas, August 26, 1997.

24. Personal interview with David Haury, May 15, 1996.

25. Personal interview with Lilian Katz, June 20, 1996.

26. Personal interview with Jeanne Bleuer, September 26, 1996.

27. Tommy Tomlinson, ERIC Redesign: Dissemination; User Group: academic, researchers, n.d.

28. In the fall of 1979, NIE contracted with King Research, Inc., to develop a database for studying ERIC. "The contract called for the development of a database containing information about the universe of ERIC action points in the United States and focusing most specifically on data about the cost and use of ERIC resources." The Final Report was delivered in 1981.

29. Joel L. Heinmiller, "ERIC Cost and Usage Study," NIE, December 1981, p. 1.

30. Ibid., Selected Findings.

31. James W. Guthrie and Trish Stoddart, "Redesigning ERIC: A Modern Information System for Practicing Educators." Paper

commissioned by the U.S. Department of Education, May 1986, p. 11.

32. According to Dianne Rothenberg (personal interview, May 15, 1996), the Practice File Project was ERIC's first attempt to put full-text documents into the database.

33. Letter from Charles W. Stansfield and Jeanne L. Rennie to Jim Bencivenga, January 16, 1987.

34. Memorandum from Mary Niebuhr, July 18, 1984.

35. Personal interview with Bob Stonehill, April 16, 1997.

36. Ted Brandhorst, "The Educational Resources Information Center (ERIC)" in Allen Kent and Carolyn M. Hall (Eds.) *Encyclopedia of Library and Information Science*, Vol. 51, Supplement 14, 1993, p. 221.

37. Robert W. Howe, "Survey of Selected ERIC Users – 1986," COED, 1986, p. 31.

38. Letters from Garry Walz to Jim Bencivenga, September 23, 1986, and from Jonathan Fife to COED, September 26, 1986.

39. "Four Point Plan for ERIC Redesign," COED, September 23, 1986.

40. Personal interview with Bob Stonehill, April 16, 1997.

41. Personal interview with Lilian Katz, July 17, 1997.

42. John W. Collins III, "ACCESS ERIC: A Concept Paper," commissioned by the U.S. Department of Education, March 1987, pp. 16-17.

43. Memorandum from Lynn Barnett, December 2, 1987.

Chapter 3

44. "ERIC Annual Report – 1989," Foreword.

45. ACCESS ERIC Assessment Report – Year 1, April 27, 1990, pp. 23-24.

46. ACCESS ERIC User Services Highlights – Year 1, n.d.

47. Personal interview with Jeanne Rennie, September 10, 1996.

48. Personal interview with Judy Beck, July 10, 1996.

49. Personal interview with Jeanne Rennie, September 10, 1996.

50. Personal interview with Bob Thomas, August 13, 1997.

51. Personal correspondence from Lynn Smarte, November 23, 1999.

52. Personal interview with Peter Dagutis, October 20, 1997.

53. E-mail correspondence provided by ACCESS ERIC.

54. Jim Bencivenga, "ERIC in Its Third Decade," December 8, 1986.

55. Elizabeth T. Payer, "The Adjunct Clearinghouse: A Concept Paper," March 1987, p. 9.

56. Summary and Response to Comments on the ERIC Redesign Proposal, May 1987, pp. 2-3.

57. Personal interview with John Patrick, May 13, 1996.

58. Summary and Response to Comments on the ERIC Redesign Proposal, May 1987, p. 3.

59. Joint Directors'/Technical Meeting: Summary, March 22, 1988.

60. Presentation by Judi Conrad (EC) at 1988 National Technical Meeting, Session-by-Session Summaries, March 23, 1988.

61. ERIC Partner Policies and Procedures Manual, November 1990, p. 1.

62. Letter from Garry R. Walz to Dr. Gus Rischer, Northwest State University, December 1, 1989.

63. Personal interview with Garry Walz, September 24, 1996.

64. "ERIC Annual Report – 1989," p. 17.

65. ERIC Clearinghouse/Partner Interorganizational Activities, 1990.

66. These sponsors are: National Child Care Information Center; American Association of Colleges for Teacher Education; Eastern Michigan University; National Trio Organization; Center for Entrepreneurial Leadership, Ewing Marion Kauffman Foundation; Center for Applied Linguistics; Indiana University; University of Virginia; University of North Texas; University of Minnesota; Educational Testing Services; and National Institute of Building Sciences.

67. "ERIC Annual Report – 1989," OERI, p. 4.

68. Charles Hoover and Ted Brandhorst, "Development and Current Status of the Educational Resources Information Center (ERIC). A Model Bibliographic Control System Covering the Literature of Education in the United States." Paper presented at the International Meeting on Educational Documentation: Present and Future, Florence, Italy, May 31–June 4, 1982.

69. InterEd: Report to the ERIC Directors'/Technical Meeting, April 30–May 2, 1991.

70. "ERIC Annual Report – 1993," OERI, p. 26.

Chapter 3

71. As reported in the "ERIC Annual Reports" for 1992, 1993, 1994.

72. "ERIC Annual Report – 1996: Summarizing the Recent Accomplishments of the Educational Resources Information Center," p. 4.

73. "ERIC Annual Report – 1998," p. 16.

74. EDRS Annual Report for 1998, p. 5.

75. Personal interview with John Patrick, May 13, 1996.

76. Personal interview with Dianne Rothenberg, May 15, 1996.

77. Personal interview with Mike Eisenberg, September 25, 1996.

78. Letters addressed in this manner were kindly shared by staff at the Clearinghouse on Adult, Career, and Vocational Education (CE).

79. Thanks go to ACCESS ERIC for sharing their collection of testimonials with us.

80. Gail MacColl, Conrad Katzenmeyer, Molly MacAdams, James McGeever, and John Egermeier, "Final Report. Staff Review of ERIC Issues – 1985," p. 21.

81. Personal interview with Susan Imel, May 14, 1996.

82. ERIC Ready Reference #10B, April 1997.

83. Personal interview with Kevin Arundel, April 24, 1997.

84. Personal interview with Kathleen McLane, May 8, 1997.

85. James W. Guthrie and Trish Stoddart, "Redesigning ERIC: A Modern Information System for Practicing Educators." Paper

commissioned by the U.S. Department of Education, May 1986, pp. 7-8.

86. Interestingly, although Guthrie and Stoddart enthusiastically advocated the need for a digest-like publication, there was no mention in their paper that the clearinghouses had been producing Digests for some five years.

87. Personal interview with Larry Rudner, September 4, 1996.

88. Personal interview with Blane Dessy, May 23, 1997.

89. ERIC Clearinghouse on Information Resources, Syracuse University, Final Report, Contract No. 400-86-0062: Conclusion Brochures, December 31, 1987, p. iii.

90. Personal interview with Kevin Arundel, June 13, 1997.

91. Don Cazentre, "SU Offers Easy-to-Read Guides to Help Parents," Syracuse Herald Journal, November 23, 1987, p. B-3.

92. Testimony to the Education and Labor Subcommittee on Select Education, U.S. House of Representatives, March 18, 1992.

93. "ERIC Annual Report – 1999."

Chapter 4

1. John W. Collins III, "Current and Future Technological Requirements of the ERIC System," commissioned by the U.S. Department of Education, June 1986, p. 5.

2. Testimony for the Record, Bob Chesley, July 30, 1987.

3. This book does not focus on ERIC online, in that this was a major achievement of the program in the first 15 years. Throughout the post-1980s, online use of ERIC continued to grow. In 1992, online access was available through four domestic vendors (Dialog, BRS, OCLC, and GTE) and one European vendor, Data-Star.

4. Testimony of Chester Finn, Jr., before the Subcommittee on Select Education of the Committee on Education and Labor, U.S. House of Representatives, July 30, 1987.

5. Personal interview with Erwin Flaxman, October 8, 1997.

6. Personal interview with Keith Stubbs, August 13, 1997.

7. Personal interview with Mike Eisenberg, September 26, 1996.

8. Personal interview with Jim Houston, September 26, 1996.

9. Personal interview with Jeanne Bleuer, September 26, 1996.

10. Personal interview with Judy Wagner, May 14, 1996.

11. Personal interview with Sandra Kerka, May 14, 1996.

12. Personal interview with Dianne Rothenberg, May 15, 1996.

13. Information Resources Clearinghouse, "Workstatement – ERIC on Floppy Disks," n.d.

14. Personal interview with Mike Eisenberg, September 25, 1996.

15. Robert Howe, "SMEAC Microcomputer Project," September 15, 1982.

16. Clearinghouse on Information Resources, "Proposal for MICROsearch for the IBM-PC," 1984, p. 1.

Notes

17. Ibid.

18. Information Resources Clearinghouse, "Workstatement – ERIC on Floppy Disks," n.d.

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4. The National High Performance Computing Act, passed in 1991, authorized the establishment of the National Research and Education Network (NREN), an expansive computer network designed to link research and educational institutions, government, K–12, and industry in every state to each other and to a broad range of research tools and information resources. Source: James A. Mitchell, "SMARTLINE Q&A," March 2, 1992.

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9. E-mail from Mike Eisenberg to Judy Wagner, Dianne Rothenberg, and Jane Henson, November 27, 1991.

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16. Personal interview with Kevin Arundel, April 24, 1997.

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23. "ERIC Annual Report – 1999."

24. Personal interview with Dorothy Myers, June 9, 1997.

25. Personal interview with Bob Stonehill, April 16, 1997.

26. Ibid.

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31. Letter from Larry Yates to Sue Ferguson, National Coalition for Parent Involvement, April 1, 1994.

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33. Personal interview with Dianne Rothenberg, May 15, 1996.

34. "ERIC Annual Report – 1999," p. 15.

35. "ERIC Users' Interchange," Spring 1997, p. 3.

36. "ERIC Annual Report – 1999, " p. 21.

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40. Robert H. Zakon, Hobbes' Internet Timeline, 1994.

41. "ERIC Annual Report – 1996," p. 15.

42. "ERIC Users' Interchange," Spring 1997, p. 7.

43. Personal interview with David Haury, May 14, 1996.

44. Telephone interview with Craig Howley, September 5, 1997.

45. Personal interview with Larry Rudner, September 4, 1996.

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47. Personal interview with Jeanne Bleuer, September 24, 1996.

48. Personal interview with Dianne Rothenberg, May 15, 1996.

49. "ERIC Annual Report – 1995," p. 13.

50. "ERIC User's Interchange," Winter 1997/1998, p. 4.

51. Personal Interview with Bob Stonehill, April 16, 1997.

52. "ERIC Users' Interchange," Fall 1994, p. 4.

53. "ERIC Annual Report – 1999," p.11.

54. Although listserv refers to a specific mailing list server, the term is sometimes used to refer to any mailing list server. LISTSERV® automated mailing list management software is a registered trademark of L-Soft International, Inc., of Landover, Maryland. LISTSERV® runs on mainframes, VMS, NT, and various UNIX workstations. LISTSERV® scans e-mail messages for the words "subscribe" and "unsubscribe" to automatically update the list. Another popular mailing list server is a freeware package called Majordomo. A mailing list is an automated e-mail system on the Internet, and is related to a specific subject such as school librarianship. There are more than 10,000 such lists. Users subscribe to the lists via e-mail and subsequently receive all new postings made to the list automatically. Conversely, when the user sends an e-mail message to the mailing list, it is then automatically forwarded to all of the addresses in the list.

55. "ERIC Annual Report – 1994," pp. 16-17.

56. ERIC Full-Text Task Force Report, July 1995, p. 2.

57. Personal interview with Wes Budke, May 14, 1996.

58. Personal Interview with Garry Walz, September 24, 1996.

Notes

59. Personal interview with Jeanne Rennie, September 10, 1996.

60. Members of this committee were: Dianne Rothenberg (PS-Chair), Mike Eisenberg (IR), Craig Howley (RC), Susan Imel (CE), Jane Henson (SO), Garry Walz (CG), Ted Brandhorst (Facility), Lynn Smarte (ACCESS ERIC), Hobart Harmon (RC), Kevin Arundel (OERI), Pat Coulter (OERI), Bob Thomas (OERI), Jeanne Bleuer (CG), Keith Stubbs (OERI), and Pete Dagutis (EDRS).

61. ERIC Full Text Task Force Report, July 1995, p. 4.

62. E-mail from Mike Eisenberg, September 19, 1996.

63. Memorandum from Barak Stussman, September 20, 1996.

64. ERIC Full Text Task Force Report, July 1995, p. 5.

65. Peter Dagutis, Appendix from Full Text Task Force Report, 1995.

66. Ibid.

67. "ERIC Annual Report – 1997," p. 11.

68. EDRS Annual Report – 1998, p.2.

69. Jane P. Atwell, "LIVE! ERIC Subscriptions Online," March 29, 1999.

70. EDRS Technology Evolution: 1995–1999, March 1999.

71. Personal communication from Richard Whalen, September 8, 1999.

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3. Personal interview with Larry Rudner, September 4, 1996.

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5. Personal interview with Erwin Flaxman, October 8, 1997.

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7. Personal interview with Mike Eisenberg, September 25, 1996.

8. Report of the ERIC's Operations Framework Task Force, "Rising Expectations: A Framework for ERIC's Future in the National Library of Education," pp. 8-9.

9. Ibid., p. 9.

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11. Personal interview with Phyllis Steckler, October 9, 1996.

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15. Personal interview with Ted Brandhorst, May 2, 1996.

16. Personal interview with Blane Dessy, May 23, 1997.

Notes

17. Personal interview with Pat Coulter, June 9, 1997.

18. Personal interview with Bob Stonehill, April 16, 1997.

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20. Personal interview with David Haury, May 15, 1996.

21. Personal interview with Joan Trumble, September 26, 1996.

22. Personal interview with Steve Balkcom, April 24, 1997.

23. Personal interview with Mike Eisenberg, September 25, 1996.

24. Personal interview with Susan Imel, May 14, 1996.

25. Personal interview with Garry Walz, September 24, 1996.

26. Personal interview with Larry Rudner, September 4, 1996.

27. Personal interview with Blane Dessy, May 23, 1997.

28. Report of the ERIC's Operations Framework Task Force, "Rising Expectations: A Framework for ERIC's Future in the National Library of Education," pp. 3 and 7.

29. Personal interview with Ellie MacFarlane, May 13, 1996.

30. Personal interview with Steve Stroup, May 13, 1996.

31. Personal interview with Dianne Rothenberg, May 15, 1996.

32. Personal interview with Art Cohen, January 3, 1997.

33. Joel L. Heinmiller, "ERIC Cost and Usage Study: A Descriptive Summary," December 1981.

34. Letter from Lynn Smarte of November 23, 1999.

35. Personal interview with Garry Walz, September 24, 1996.

Subject Index

Abstracting, 8, 10, 11, 37, 91, 98, 102, 158, 191

ACCESS ERIC, x, 5, 6, 21, 39, 44, 46, 47, 54, 55, 71, 72, 73, 74, 75, 76, 77, 79, 81, 82, 92, 93, 94, 109, 116, 130, 135, 136, 137, 139, 143, 154, 165, 185, 189, 198, 206, 207, 209, 218

Acquisitions, 41, 69, 99

Adjunct Clearinghouses:
  Art Education, 79, 132, 172, 180
  Child Care, 15, 132, 180, 208
  Clinical Schools, 180
  Compensatory Education, 79, 180
  Consumer Education, 181
  Entrepreneurship Education, 181
  ESL Literacy Education, 79, 139, 181
  International Civic Education, 181
  Law-Related Education, 132, 181
  National TRIO Clearinghouse, 6, 181
  Postsecondary Education and the Internet, 181
  School Counseling Services, 181
  Service Learning, 181
  Test Collection, 15, 181
  United States-Japan Studies, 79, 86, 132, 181

Affiliated Clearinghouse (*see* National Clearinghouse for Educational Facilities), 3, 15, 182, 187, 190

All About ERIC, 94

America Online, 135, 136, 137, 214

American Association of School Administrators (AASA), 83

American Educational Research Association (AERA), 55, 202

American Psychological Association (APA), 6

American Society for Information Science (ASIS), 84, 177

Index

Appalachian Educational Laboratory (AEL), 133

AskERIC, 2, 6, 119, 120, 121, 122, 123, 124, 125, 126, 129, 133, 136, 143, 190, 215

Australian Education Index (AEI), 84

Best of ERIC Pilot Project, 112, 113, 140, 141

Big6, 139

British Education Index (BEI), 83, 84, 85

BRS Information Technologies, 95, 106, 211

Budget, 8, 12, 13, 15, 16, 26, 45, 47, 53, 54, 55, 57, 71, 73, 95, 134, 152, 159, 160, 161, 162, 163, 189, 198, 202

Canadian Education Index (CEI), 84

CD-ROM, 5, 14, 21, 36, 61, 84, 85, 96, 97, 99, 102, 103, 104, 105, 109, 111, 112, 143, 146, 155, 189

Center for Schools, Families, and Community Partnerships, 127

Center for Statistics, 47

Central ERIC (CERIC), 2, 24, 34, 37, 38, 63, 75, 108, 173

Children's Television Network, 6

Clearinghouses:

  Adult, Career, and Vocational Education (CE), 41, 89, 98, 140, 142, 162, 171, 174, 181, 196, 209, 218

  Assessment and Evaluation (TM), 15, 31, 131, 132, 133, 137, 139, 142, 153, 157, 163, 171, 175, 182, 196

  Community Colleges (JC), 58, 165, 171, 175, 181, 196

  Counseling and Personnel Services (CG) (*see also* Counseling and Student Services), 46, 47, 48, 51, 81, 82, 175, 196

  Counseling and Student Services (CG) (*see also* Counseling and Personnel Services), 11, 16, 50, 66, 98, 132, 134, 141, 162, 171, 175, 181, 218

Subject Index

Disabilities and Gifted Education (EC) (*see also* Handicapped and Gifted Children), 11, 90, 171, 175, 176

Educational Management (EA), 3, 41, 85, 132, 138, 171, 176, 187, 196

Elementary and Early Childhood Education (PS), 12, 15, 50, 66, 82, 86, 99, 105, 106, 126, 128, 132, 134, 164, 171, 176, 180, 189, 190, 196, 218

Handicapped and Gifted Children (EC) (*see also* Disabilities and Gifted Children), 30, 80, 81, 90, 130, 175, 196, 201, 208

Higher Education (HE), 6, 12, 38, 57, 80, 85, 130, 171, 176, 181, 196, 201

Information & Technology (IR) (*see also* Information Resources), 2, 6, 87, 97, 122, 123, 131, 132, 134, 139, 143, 153, 154, 162, 171, 177, 215, 218

Information Resources (IR) (*see also* Information & Technology), 41, 92, 93, 99, 100, 101, 115, 119, 120, 121, 122, 123, 125, 131, 132, 134, 177, 188, 190, 196, 201, 210, 211, 212

Languages and Linguistics (FL), 27, 44, 45, 48, 69, 76, 79, 111, 130, 141, 171, 177, 178, 181, 196

Reading, English, and Communication (CS), 15, 122, 132, 139, 164, 171, 178, 196

Rural Education and Small Schools (RC), 62, 63, 132, 133, 154, 171, 178, 179, 196, 203, 218

Science, Mathematics, and Environmental Education (SE), 66, 71, 100, 121, 132, 133, 154, 160, 171, 179, 196

Social Studies/Social Science Education (SO), 23, 40, 79, 86, 132, 152, 171, 172, 179, 180, 181, 182, 196, 218

Teaching and Teacher Education (SP), 47, 75, 112, 130, 171, 179, 180, 196

    Urban Education (UD), 79, 96, 126, 127, 132, 154, 171, 180, 187, 190, 196

Coalition for ERIC Support, 56

Compact ERIC Prototype Project (CEPP), 109, 110, 111, 112, 113, 189, 213

CompuServe, 100, 106, 135, 136

Computer Microfilm Corporation (CMC), 75, 184

Conclusion Brochures (*see also* Parent Brochures), 76, 91, 92, 93, 94, 210

Cost and Usage Study (*see also* King Report), 26, 67, 165, 189, 194, 205, 221

Council of ERIC Directors (COED), 29, 30, 32, 38, 39, 41, 47, 48, 49, 54, 55, 57, 71, 72, 196, 206

Current Index to Journals in Education (CIJE), 4, 5, 12, 13, 14, 61, 100, 187, 193, 195

Decentralization, 8, 9, 10, 11, 12

Dialog, 5, 84, 85, 95, 96, 104, 106, 187, 211

Directors' Meeting, 62, 63, 192

Directors'/Technical Meeting, 83, 207, 208

Document Delivery, 13, 20, 142, 146, 147

E*Subscribe, 147, 148, 190

Eastern Regional Meeting, 33

EBSCO Publishers, 5, 149

Edison Electric Institute, 83

Educational Extension Agents, 25

Eisenhower National Clearinghouse, 153, 159, 160

Electronic Document Delivery (*see also* Full-Text Document Delivery), 21, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 190

ERIC Document Reproduction Service (EDRS), ix, 4, 5, 13, 14, 18, 20, 21, 38, 76, 86, 130, 143, 144, 145, 146, 147, 149, 170, 184, 186, 189, 190, 209, 218

ERIC Processing and Reference Facility, 4, 7, 15, 18, 23, 63, 98, 102, 108, 109, 110, 156, 158, 170, 183, 186, 193, 202, 212

ERIC:

  Database, ix, 2, 3, 4, 5, 6, 14, 16, 17, 18, 20, 21, 26, 32, 36, 37, 38, 43, 45, 49, 59, 60, 61, 62, 63, 64, 67, 68, 69, 70, 72, 78, 84, 85, 93, 96, 99, 101, 103, 104, 105, 106, 108, 109, 110, 122, 123, 124, 125, 131, 136, 137, 141, 142, 144, 145, 146, 149, 151, 153, 154, 155, 156, 158, 159, 163, 165, 187, 188, 189, 190, 191, 193, 203, 206, 212

  Digests, 2, 21, 85, 89, 90, 91, 92, 93, 94, 97, 105, 106, 107, 108, 109, 118, 122, 125, 131, 132, 135, 140, 165, 189, 210, 213

  Digests Online (EDO), 97, 105, 106, 107, 108, 109, 131, 140, 189, 213

  Full Text Task Force, 141, 144, 213, 217, 218

  Information Analysis Products (IAP), 45, 88

  Partners, 6, 15, 16, 21, 46, 54, 71, 79, 80, 81, 82, 83

  Program Office, 2, 4, 13, 15, 76, 82, 109, 111, 158, 161, 166, 169, 173, 193

  Redesign Study, 25, 30, 72, 74, 79, 189, 197

  Technology Committee, 54, 103

ERICDIR, 138, 143

ERICEXEC, 139

Families, Technology, and Education (FTE) Conference, 129

Four-Point Plan, 40, 41, 198

FREENET, 128

Full-Text Document Delivery (*see also* Electronic Document Delivery), 21, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 190

Full-Text Pilot Project, 97, 109, 110, 111, 113

Government Printing Office (GPO), 4, 13

GTE Education Systems, 135, 211, 214

Indexing, 8, 10, 18, 37, 60, 61, 102, 152, 158, 159, 191

Institute for Scientific Information (ISI), 5

InterEd, 83, 84, 85, 208

International Bibliography of Higher Education, 85

International Reading Association (IRA), 83

Internet, 4, 5, 6, 17, 21, 86, 97, 115, 118, 119, 121, 122, 123, 124, 125, 126, 128, 129, 130, 131, 132, 133, 135, 136, 137, 138, 140, 141, 150, 152, 153, 154, 155, 157, 158, 163, 181, 190, 191, 216, 217

ITPUBS, 139

Journal Article Literature, 4, 5, 20, 61, 68, 81, 102, 110, 113, 136, 149, 155, 156, 187

K12ASSESS_L, 139

King Report (*see also* Cost and Usage Study), 26, 68, 90, 194, 205

Literacy Education for Limited English-proficient Adults, 79

Microcomputers, 99, 103, 211

Microfiche, 4, 5, 21, 61, 71, 85, 87, 95, 96, 106, 110, 115, 141, 143, 144, 145, 146, 154, 163

MICROsearch, 97, 99, 100, 101, 211

Minibibs, 88

National Association for State Boards of Education, 6

National Association for the Education of Young Children (NAEYC), 127

National Clearinghouse for Educational Facilities (NCEF), 3, 15, 176, 182, 187, 190

National Council of Educational Opportunity Association, 6

National Information Services Corporation (NISC), 5, 104

National Institute of Education (NIE), 22, 26, 27, 29, 42, 45, 54, 67, 68, 88, 173, 188, 189, 195, 205

National Library of Education (NLE), 22, 151, 154, 156, 158, 163, 169, 173, 190, 203, 204, 219, 220

National Parent Information Network (NPIN), 126, 127, 128, 129, 130, 190

National PTA, 127

National Technical Information Service (NTIS), 26, 34, 158, 208

NIFL-ESL, 139

Northeast Parallel Architecture Center (NPAC), 142

NYSERNET, 122

Office of Education (OE), 4, 7, 8, 9, 22, 25, 29, 51, 60, 81, 89, 169, 173, 186, 189

Office of Educational Research and Improvement (OERI), 22, 26, 27, 29, 30, 31, 32, 33, 34, 38, 39, 40, 42, 43, 45, 46, 47, 50, 51, 55, 57, 67, 69, 70, 71, 72, 73, 74, 77, 78, 80, 81, 89, 116, 130, 131, 157, 163, 173, 189, 196, 198, 200, 201, 208, 214, 218

Online Computer Library Center (OCLC), 5, 104, 149, 211

Operations Framework Task Force, 155, 160, 163, 219, 220

ORBIT Search Service, 95

Oryx Press, 4, 13, 14, 18, 19, 65, 104, 130, 152, 156, 170, 193

Ovid Technologies, 5

Oxford University Press, 83

Parent Brochures (*see also* Conclusion Brochures), 92, 93, 94, 210

Pocket Guide to ERIC, 94

Practice File Project, 68, 69, 140, 189, 206

Practitioner Target Audience, 45, 69

Prairienet, 128

QA_Net, 139

Quality Control, 10, 34, 36, 99, 145, 164, 196, 198

RAND Report, 12, 188

READPRO, 139

Redesign Panel, 29, 30, 31, 33, 34, 38, 40, 42, 47, 67, 73, 77

Redesign Study, 25, 30, 72, 74, 79, 189, 197

Resources in Education (RIE), 4, 45, 59, 63, 69, 98, 100, 110, 146, 187, 188, 195, 203

San Mateo Educational Resources Center (SMERC), 29, 68

School Disc Project, 109, 110, 112, 113

SENDIT, 122

SERVE-Line, 135

SilverPlatter, 5, 102, 103, 104, 105, 149, 191, 212

SMARTLINE, 116, 117, 118, 119, 120, 122, 159, 213, 214

Standing Order Customers (SOCs), 40, 71, 72, 85

Sun Microsystems, 123

Syracuse University, 87, 92, 93, 100, 121, 123, 133, 142, 153, 174, 177, 210

System Development Corporation, 95

Technical Meeting, 83, 207, 208

Technical Steering Committee, 32, 52, 69, 95, 188

TENET, 122

Terminology Control Group (TCG), 17

Thesaurus of ERIC Descriptors, 17, 18, 19, 20, 60, 187, 188, 189

U.S. Department of Education, 2, 15, 22, 26, 47, 48, 57, 64, 81, 89, 109, 117, 123, 153, 161, 173, 188, 192, 197, 201, 206, 210, 214

U.S. House of Representatives Subcommittee on Select Education, 30, 47, 51, 52, 95, 194, 196, 200, 201, 202, 204, 210, 211, 212, 214

UMI Full Text Pilot Project, 97, 109, 110, 111, 112, 113

UnCover Company, 5

University Microfilms, Inc. (UMI), 97, 109, 110, 111, 113, 140

University of Illinois PLATO System, 108

User Services, 75, 76, 85, 87, 89, 99, 101, 130, 135, 207

Virtual Library, 6, 122, 123, 124

VOCAB-L, 139

Vocabulary Review Group, 139

Web sites, 5, 6, 86, 92, 109, 115, 122, 123, 124, 125, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 144, 145, 146, 149, 152, 153, 154, 155, 162, 214

Personal Name Index

Abdal-Haqq, Ismat, 171, 180

Ackerman, Paul, 175

Altekruse, Michael, 181

Arundel, Kevin, 27, 54, 65, 89, 92, 95, 101, 105, 108, 120, 161, 169, 193, 195, 204, 209, 210, 212, 213, 215, 218

Ashborn, Elizabeth, 180

Atwell, Jane, 218

Balkcom, Steve, 161, 169, 220

Barnett, Lynn, 32, 52, 80, 95, 151, 171, 196, 201, 206

Beck, Judy, 75, 112, 171, 207, 213

Bencivenga, Jim, 27, 29, 32, 33, 38, 42, 43, 44, 45, 46, 73, 78, 196, 199, 200, 206, 207

Bleuer, Jeanne, 11, 50, 66, 82, 98, 115, 134, 171, 192, 200, 205, 211, 213, 217, 218

Block, L., 184

Blosser, Patricia, 179

Born, Warren, 177

Boston, Carol, 143, 170

Brandhorst, Ted, 7, 10, 11, 13, 16, 18, 19, 20, 23, 25, 53, 54, 55, 60, 62, 63, 64, 83, 102, 103, 105, 110, 115, 156, 158, 163, 170, 183, 191, 192, 193, 194, 199, 201, 202, 203, 204, 206, 208, 212, 213, 218, 219

Brenner, William, 182

Brown, Jim, 184

Budke, Wes, 140, 171, 217

Burchinal, Lee, 8, 9, 17, 32, 166, 169, 193

Burdin, Joel, 180

Butler, Michael, 180

Carss, Brian, 176

Cawley, Clarence, 33, 34, 197

Cawley, Nancy, ix, 144, 146, 149, 194, 195, 199, 202

Chesley, Bob, 24, 25, 29, 45, 54, 95, 102, 169, 173, 194, 195, 199, 202, 210, 212

Clark, Gilbert, 172, 180

Clark, John, 178

Clark, Richard, 177

Cohen, Art, 25, 58, 165, 171, 175, 181, 196, 202, 220

Cole, Jack, 178

Collins, John, 35, 73, 74, 196, 197, 206, 210

Collins, Timothy, 179

Coombs, Donald, 177

Coulter, Pat, 22, 59, 159, 169, 173, 218, 220

Coy, Doris Rhey, 181

Cross, Christopher, 74

Dagutis, Peter, 13, 76, 144, 155, 170, 184, 193, 207, 218, 219

DeCrow, Roger, 174

Dessy, Blane, 22, 60, 91, 158, 163, 169, 194, 203, 210, 219, 220

Dilworth, Mary, 180

Drill, Janet, 171

Dyer, Henry, 175

Ebersole, Joseph, 183

Echternacht, Gary, 175

Eddington, Everett, 178

Eddy, Peter, 178

Eidell, Terry, 176

Eisenberg, Michael, 87, 93, 94, 97, 115, 116, 117, 119, 120, 121, 123, 125, 133, 142, 143, 152, 154, 162, 171, 177, 204, 209, 211, 214, 215, 218, 219, 220

Elliott, Lloyd, 176

Ely, Donald, 48, 52, 54, 55, 87, 95, 99, 125, 177, 196, 200, 201

Erickson, Donald, 30, 31, 47, 52, 71, 175, 196, 197, 200, 201

Fay, Leo, 178

Fife, Jonathan, 12, 39, 55, 57, 171, 176, 193, 196, 198, 202, 206

Finn, Chester, 26, 27, 29, 30, 31, 32, 34, 38, 39, 41, 52, 53, 70, 95, 96, 194, 198, 201, 211

Flaxman, Erwin, 96, 127, 154, 171, 180, 196, 211, 215, 219

Fortin, Victor, 184

Fustukjian, Samuel, 185

Gillespie, Marilyn, 181

Glacken, Tom, 184

Goldstein, Anne, 180

Gordon, Edmund, 180

Grabowski, Stanley, 174

Gracza, John, 184

Harmon, Hobart, 179, 218

Harnett, Ann Marie, 171

Haswell, Harold, 8, 173

Haury, David, 66, 121, 133, 134, 153, 160, 171, 179, 205, 215, 216, 219, 220

Helburn, Nicholas, 179

Henson, Jane, x, 23, 152, 171, 194, 214, 218, 219

Hoover, Charles, 7, 52, 54, 60, 65, 83, 169, 173, 191, 195, 201, 202, 203, 204, 208

Houston, Jim, 18, 19, 20, 98, 170, 193, 194, 211

Howe, Robert, 71, 179, 196, 206, 211

Howley, Craig, 62, 64, 133, 154, 171, 179, 203, 204, 216, 218

Imel, Susan, 62, 89, 162, 171, 174, 209, 218, 220

Jaffe, James, 184

Jordan, June, 175

Katz, Lilian, 12, 66, 73, 86, 126, 171, 176, 192, 196, 205, 206

Kerka, Sandra, 98, 171, 211

Kezar, Adrianna, 176

Koch, Carl, 184

Koller, Herbert, 177

Koppa, Charles, 184

Laffey, James, 178

Lange, Carl, 176

Lankes, David, 154, 177

Levinson, Luna, 163, 173

MacFarlane, Ellie, 15, 164, 171, 193, 220

Magisos, Joel, 174

Marron, Harvey, 173

Massanari, Karl, 180

Mayhew, Lewis, 177

McCord, Richard, 183

McLane, Kathleen, 11, 90, 171, 192, 209

Melville, S. Donald, 175, 196

Milam, John, 181

Milbourne, Linda, 171

Mildenberger, Kenneth, 177

Miller, Juliet, 171, 174, 196

Mingo, Sheila, 176

Moorehead, Alan, 173

Morrissett, Irving, 179

Muirhead, Peter, 176

Myers, Dorothy, 49, 125, 169, 200, 215

O'Donnell, Bernard, 178

Paisley, William, 177

Parsons, Cynthia, 32, 34, 197

Patrick, John, 79, 86, 171, 179, 181, 196, 207, 209

Payer, Elizabeth, 77, 200, 207

Peters-Johnson, Cassandra, 176

Peterson, Marla, 174

Peyton, Joy, 178, 181

Piele, Philip, 62, 176, 196

Pierron, Ione, 176

Potts, Alfred, 178

Quilling, Mary, 180

Ramirez, Bruce, 176

Reeve, Andrea, 181

Reichbach, Gwen, 181

Rennie, Jeanne, x, 27, 29, 33, 38, 45, 51, 75, 76, 111, 141, 142, 171, 195, 196, 197, 198, 199, 200, 202, 206, 207, 213, 218

Richardson, John, 179

Rios, Betty Rose, 179, 196

Risinger, C. Frederick, 182

Roberts, A. Hood, 177, 178

Rothenberg, Dianne, x, 46, 50, 52, 62, 86, 99, 102, 105, 106, 108, 111, 116, 119, 128, 133, 134, 140, 164, 171, 200, 201, 206, 209, 211, 212, 213, 214, 215, 216, 217, 218, 220

Rudner, Lawrence, 31, 32, 57, 59, 65, 91, 115, 133, 153, 157, 163, 171, 175, 196, 197, 203, 204, 210, 216, 219, 220

Sauer, Charles, 184

Schramm, William, 177

Shumer, Rob, 181

Simonton, Wesley, 177

Smarte, Lynn, x, 76, 154, 165, 170, 185, 199, 207, 218, 219, 221

Smith, Carl, 178

Spencer, Mima, 105, 106, 108, 213

Stansfield, Charles, 45, 178, 196, 199, 200, 206

Steckler, Phyllis, 12, 14, 65, 104, 152, 156, 170, 192, 193, 204, 212, 219

Stewart, Dorothy, 171

Stonehill, Bob, 16, 17, 25, 49, 55, 69, 72, 79, 84, 96, 109, 110, 111, 120, 121, 125, 126, 133, 137, 142, 159, 169, 173, 193, 200, 201, 203, 204, 206, 213, 215, 217, 220

Strohmenger, C. Todd, 62, 179, 203

Stroup, Steve, 122, 164, 171, 215, 220

Stubbs, Keith, 96, 118, 124, 131, 157, 169, 173, 211, 213, 214, 215, 216, 218, 219

Suhor, Charles, 178, 196

Summers, Edward, 178

Swanson, Beverly, 170, 185

Taheri, Belinda, 170

Taylor, Robert, 174

Thomas, Bob, 66, 76, 161, 166, 169, 205, 207, 218

Tiedeman, David, 174

Tomlinson, Tommy, 67, 196, 197, 205

Trumble, Joan, 161, 169, 220

Veale, Jack, 184

Wagner, Judy, 98, 171, 211, 214

Wakefield, Howard, 176

Walz, Garry, 16, 49, 50, 53, 71, 73, 81, 82, 109, 134, 141, 162, 166, 171, 175, 193, 196, 200, 201, 206, 208, 217, 218, 220, 221

Weintraub, Frederick, 175

West, Leonard, 179

Whalen, Richard, 149, 161, 169, 218

Wilkerson, Doxey, 180

Willey, Darrell, 178

Williams, Janet, 182

Yates, Larry, 127, 128, 216

Yff, Joost, 171, 180

Yurkovich, John, 176

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